

THE IRON AGE

New York, Thursday, September 20, 1906.

The Atlanta Tin Plate & Sheet Mill.

A representative type of independent finishing mill devoted to the manufacture of sheets is that of the Atlanta Tin Plate & Sheet Mill, Atlanta, Ind., which has just been placed in operation. This mill was completed in the summer of 1904 by the Atlanta Rolling Mill & Tin Plate Company, its erection having been undertaken the previous year, but was never operated by its original owner and was recently purchased from receivers' hands by new interests. Its output will consist of light sheets and black plates as specialties, although its builder intended it for the manufacture of both sheets and tin plate.

The plant is located on a site of $7\frac{1}{2}$ acres on the outskirts of the city of Atlanta. As shown in Fig. 2 it con-

tains a Bass Foundry & Machine Company, Fort Wayne, Ind., equipped with an 18-ft. flywheel weighing 55 tons. The cold rolls are geared to a 24 x 48 in. Corliss engine by means of three straight tooth gears.

Two 44-in. and two 38-in. doubling shears are located in front of the hot rolls and between the latter and the heating furnaces. They are driven by individual Westinghouse motors of $7\frac{1}{2}$ and $5\frac{1}{2}$ hp., respectively. The four-sheet and pair furnaces shown in Fig. 1 were built by the Amsler Engineering Company, Pittsburgh, and are operated by producer gas. The sheet furnaces are 7 x 8 ft. in the clear and pair furnaces 6 x 8 ft. Provision has been made for installing two additional furnaces, but the gas producer equipment will not be added to, as the two now in operation are of sufficient capacity to supply the requirements of the ultimate installation.

Other shearing machinery consists of two pairs of



Fig. 1.—Interior of the Main Building of the Atlanta Tin Plate & Sheet Mill, Atlanta, Ind., Showing the Hot Rolls and Heating Furnaces.

sists of a main building, 60 x 464 ft., with a 20-ft. lean-to 165 ft. of its length; packing room, 60 x 120 ft.; machine shop, 40 x 100 ft., and boiler house, 50 x 100 ft. The sheet mills, heating and annealing furnaces and the pickling vat are located in the main building, Figs. 1 and 3. This building is equipped with a 20-ton electric traveling crane, built by the Whiting Foundry & Equipment Company, Harvey, Ill., having a span of 56 ft. 7 in., with a height to the top of the crane girders of 25 ft. The four hot mills, two of which have 36-in. rolls, and the other two 32-in., parallel the length of the building, while the cold mills, Fig. 4, which are operated tandem, are at right angles to the hot mills. Provisions have been made for the installation of two additional 40-in. hot mills. They are all of standard type, having steel spindles, boxes, housings and rolls, and were built by the United Engineering & Foundry Company, Pittsburgh. The hot mills are driven through a 14-ft. steel gear weighing 40 tons by a 32 x 60 in. Corliss engine, built by the

60-in. squaring shears operated by individual $7\frac{1}{2}$ -hp. Westinghouse motors, one 126-in. squaring shear driven by a 10-hp. motor, one pair of bar shears driven by a 20-hp. motor and a 26-in. roll lathe equipped with a Reeves' variable speed device, which in addition to the shears was installed by the United Engineering & Foundry Company.

The pickling vat, which is located in one of the extreme ends of the building, was installed by the Mesta Machine Company, Pittsburgh. The double annealing furnace, which is heated by gas from a single gas producer, installed by the Amsler Engineering Company, is $23\frac{3}{4}$ ft. long and 20 ft. 6 in. wide. Provisions have been made for an additional furnace, which will be built as soon as the two additional hot mills are added. This furnace is located directly below the cold rolls, the material coming into the plant at one end in the form of sheet bars and passing through the various stages of manufacture from the hot mills to the cold mills, after

which it is annealed and pickled or immediately shipped, as desired.

The sheets are placed in the furnace by means of a Freeman charger, built by the George A. Hogg Iron & Steel Foundry Company, Pittsburgh. The charging machine, as shown in Fig. 5, is equipped with a hydraulic jack of 30 tons capacity, which is used in giving the table of the charger a vertical lift of 3 in. and a horizontal forward movement of 10 in. After the sheets are placed on the charger and covered with the charging boxes the entire load is raised to the level of the floor of the furnace and is drawn in by means of a traveling

well equipped with tools for making such repairs as are required in a plant of this kind. A tin house, 60 x 80 ft., has been proposed, but will not be built unless the manufacture of tin plate is decided upon. The packing room, in which the main office is also located, parallels the main building. The electric generating plant is located in one section of the machine shop and consists of an 18 x 18 in. Skinner automatic engine, built by the Skinner Engine Company, Erie, Pa., direct connected to a 150-kw. generator, installed by the Fort Wayne Electric Company, Fort Wayne, Ind. Power is supplied for operating all of the motors and for lighting, the main

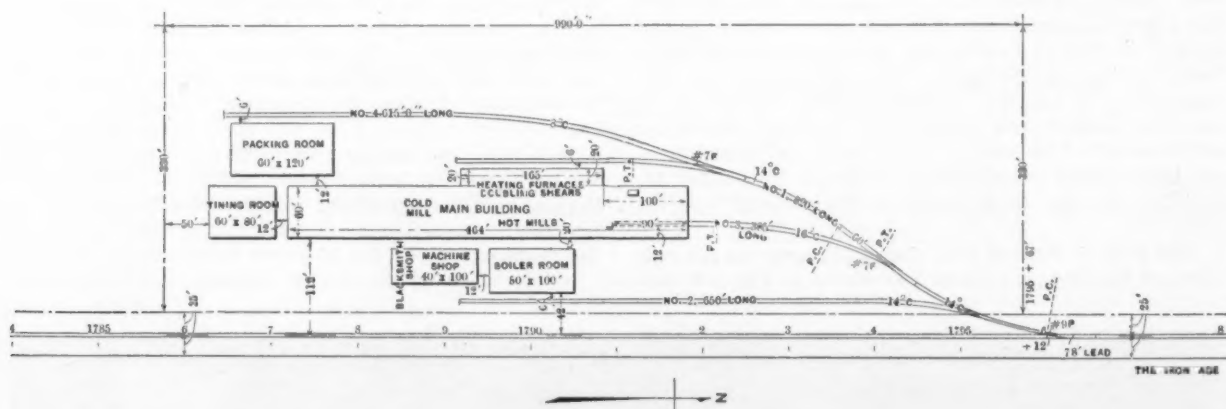


Fig. 2.—Ground Plan of the Atlanta Tin Plate & Sheet Mill.



Fig. 3.—Another View in the Main Building.—The Hot Rolls and Doubling Shears in the Foreground and Cold Rolls in the Distance.

crane. After the annealing boxes are deposited in the furnace the lifting mechanism of the charger is lowered to its normal position and the charging machine is withdrawn from the furnace. The brickwork of the furnace is raised to a point 30 in. above the floor line and the heated air enters the sides and bottom through checker brickwork.

Steam is generated by eight tubular boilers of 150 hp. each, built by the Bass Foundry & Machine Company and equipped with Roney stokers, installed by the Westinghouse Machine Company, Pittsburgh. The pumping plant includes two pumps of 1600 hp., installed by Henry R. Worthington, New York. The machine shop is

building being well provided with arc lamps for night operation. All of the buildings are of brick, except the main building, which is of steel.

The plant was designed and built under the direction of W. H. Jones, its superintendent under the first owner. The mill has a rated annual capacity of 1400 tons, and purchases its steel supply in the open market. The officers of the new company are: President, Edward L. McKee, Indianapolis; vice-president, Harold D. Hibben, Indianapolis; treasurer, Edward B. Porter, Indianapolis; general manager, Charles A. Ford, Kokomo. Other directors are Hiram P. Wasson, Indianapolis; Wm. H. Marer, Tipton, Ind., and Edgar S. Welton, Atlanta, Ind.

The New England Foundrymen's Association.

This society resumed its monthly meetings Wednesday September 12, at the Exchange Club, Boston. Vice-presi-

the August outing at Providence one of the most successful the association has held. Vice-president Bense announced that the Executive Committee had secured some of the most prominent men in the foundry industry to address the association the coming season and urged the

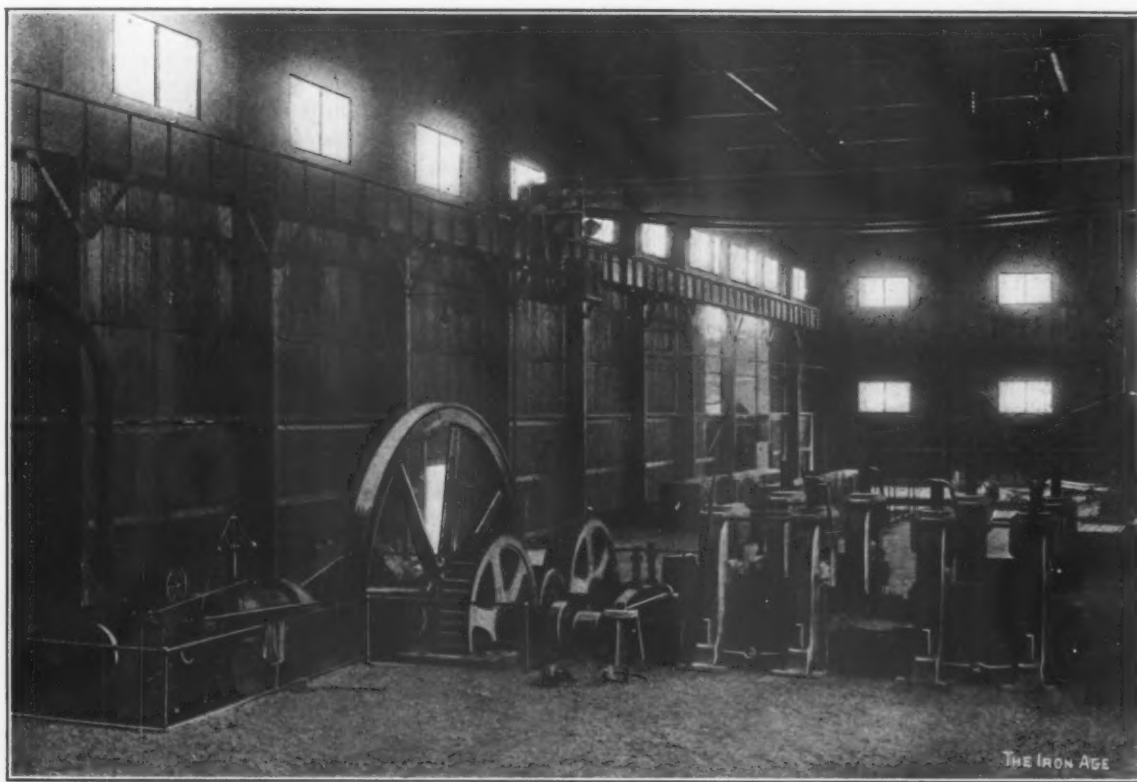


Fig. 4.—The Four Stands of Cold Rolls.

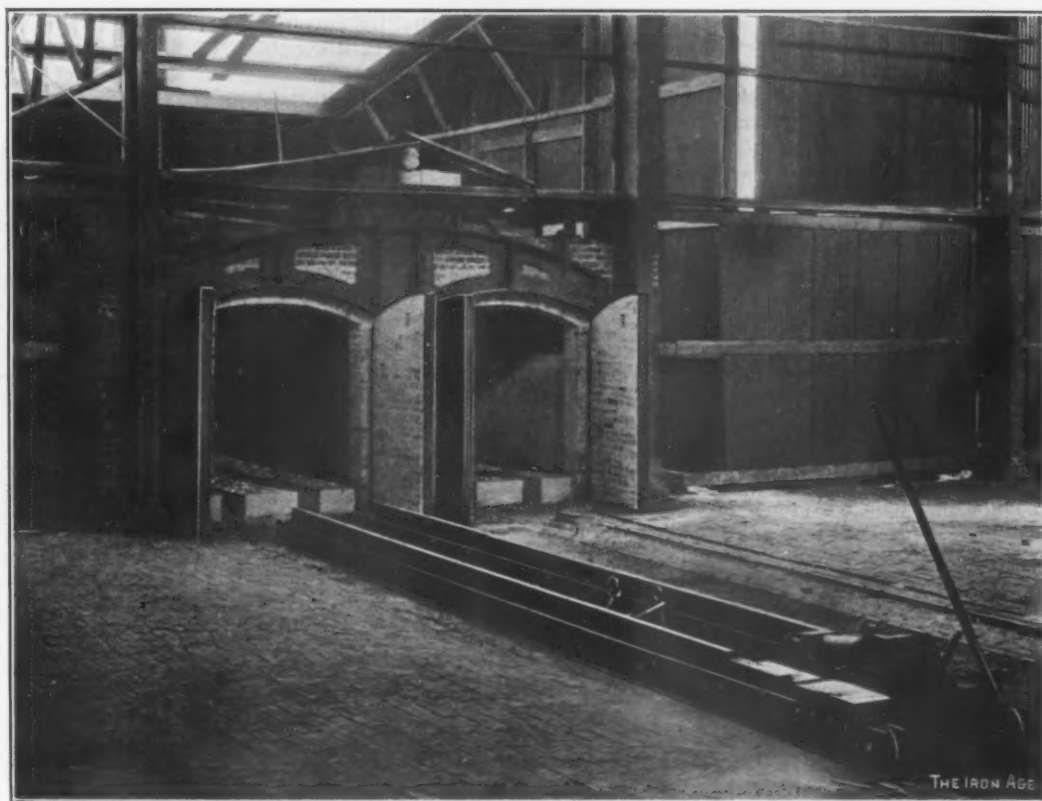


Fig. 5.—The Annealing Furnace, with the Freeman Charger in the Foreground.

dent Bense presided. Application for membership was received from Milford Iron Foundry, Milford, Mass., and it was unanimously elected. A vote of thanks was extended to Henry A. Carpenter for his efforts in making

members to renew their efforts to increase the membership. After dinner the chairman introduced E. H. Mumford, Philadelphia, who gave an illustrated talk on "Recent Molding Machinery and Methods."

A Western Silica Brick Plant.

The operation of the silica brick plant of the American Refractories Company at Joliet, Ill., marks the first westward movement of this industry, which has been confined to Pittsburgh and the East, owing to the proximity of the ganister deposits. In fact, the manufacture of this high grade refractory, which is indispensable in steel works practice, has been limited almost entirely to the State of Pennsylvania, owing to the accessibility of the raw material. The location of extensive deposits of ganister in the Baraboo district of southern Wisconsin, however, threatens to wrest the center of this industry from the East, as the virgin rock is found in large quantities along the shore of Devil's Lake, from which the American Refractories Company draws its supply and where it has acquired large tracts.

An analysis of the rock shows that it is the equal of the deposits in the famous Hollidaysburg district in Pennsylvania, and owing to its extremely low alumina content the manufactured product has a long life when subjected to high tests. The following analyses indicate the refractory qualities of the boulder, solid material in the intermediate stage of manufacture and the finished product:

	Boulder.	Solid material.	Brick.
SiO ₂	97.76	98.28	97.10
Fe ₂ O ₃	1.02	0.77	0.93
Al ₂ O ₃	0.78	0.57	0.93
CaO.....	0.06	0.04	1.58
MgO.....	0.05	0.03	0.11
Loss by Ign.....	0.38	0.35	0.06

The plant, which has a daily capacity of 50,000 standard silica brick, has been built on a site of 40 acres at Rockdale, a suburb of Joliet, and contains nine round kilns, each with a capacity of 100,000, and three square kilns, each of 30,000 capacity. The plant has been so designed that the second unit can be located between the office building and the first unit, and sufficient room has been provided for increasing the output to the enormous total of 250,000 daily, or 75,000,000 per year. The erection of the second unit is now under consideration, as the capacity of the present installation is hard pressed to cope with the demand. The round kilns have inside dimensions of 32 ft., are of the circular down draft type and are provided with eight fireboxes each. The square kilns are 15 x 30 ft., have three fireboxes at either end and are similar in construction to those used in the manufacture of magnesite and chrome brick, to which purpose they may be ultimately put.

The main building, which contains the molding floor, grinding room, bins and the power plant, is 130 x 240 ft. It is of steel construction throughout and absolutely fireproof. The ganister, which is shipped over the Chicago & Northwestern and Elgin, Joliet & Eastern railroads from Devil's Lake, a distance of 180 miles, is dumped from a trestle 20 ft. high, paralleling the main building, into a crusher, where it is broken into sizes suitable for use in the grinding pans. It is then elevated by means of a bucket conveyor into three steel bins with inclined hoppers, from which it is fed into the grinding pans as required. Another bin will shortly be installed, and owing to their location two have center dump hoppers and those on the outside side drops. The bins are constructed of steel beams and plates and have a capacity of 150 tons each. The hoppers are provided with automatic measuring chutes and the doors are controlled by levers. The three grinding pans, which reduce the material with two steel rollers, each weighing 8500 lb., were installed by the Clearfield Machine Company, Clearfield, Pa. The molding floor, which has an area of 25,000 sq. ft., is covered with steel plates and the bricks, which are all hand made, are dried by exhaust steam. The power plant contains two 260-hp. Rust vertical water tube boilers, installed by the Rust Boiler Company, Pittsburgh, which generate steam for one 250-hp. Corliss engine, built by the Bates Machine Company, Joliet. A 30-kw. Western Electric generator provides all the power required for lighting purposes.

Transportation facilities are unexcelled, as the company has direct connection with the Elgin, Joliet & East-

ern Railroad, Chicago's outer belt line, which connects with all roads entering the Western metropolis. A spur from the Rock Island system enters the property and the proximity to the Illinois coal fields makes the location particularly economical as to fuel carrying charges.

The plant, together with its Wisconsin ganister properties, represents an investment of \$250,000. The company was promoted by E. M. Allen, its general manager, who has had wide experience in the manufacture of high grade refractories for manufacturing purposes, having formerly been president of the Fayette Mfg. Company, Pittsburgh, which was absorbed by the Harbison-Walker Refractories Company, and was subsequently a director of the latter concern. O. L. Jones, the superintendent of the plant, formerly occupied similar positions with the Fayette Mfg. Company at its Chester, Pa., works, and the Hays plant of the Harbison-Walker Refractories Company, Pittsburgh.

New Standard for Hexagon Head Screws and Nuts.

The standard bolt and nut thread known as the U. S. or Sellers standard was proposed by William Sellers and recommended by a committee of the Franklin Institute in 1864. In 1868 it was adopted by the United States Army and Navy departments and afterward by the Master Mechanics' and Master Car Builders' associations. In this thread both the point and root of the thread are flattened, in the first case one-eighth of the point being removed, and in the other the root being filled in one-eighth, thereby leaving three-quarters of the depth of the thread for a bearing surface. The thread has an angle of 60 degrees.

It has long been recognized that in this standard the pitch of the threads is too coarse and the heads and nuts of the different sizes are too large. To remedy this trouble the Association of Licensed Automobile Manufacturers, through its mechanical branch, has adopted a new standard for hexagon head screws, castle and plain nuts. The committee appointed for this work was made up as follows: A. L. Riker, H. E. Coffin, H. P. Maxim, Charles B. King, John Wilkinson and Russell Huff, with Henry Souther in consultation.

The standard was adopted April 6, 1906, and has just been made public in Bulletin No. 18, issued by the association.

The castle or lock nut mentioned is formed with six transverse grooves in one of its surfaces to receive a cotter pin passing through a hole in the screw. The following table is arranged to give the principal features of the new standard, together with those of the U. S. standard:

A. L. A. M. Standard.				U. S. Standard.			
Diam-eter.	Pitch.	Short Diam-eter.	Thick-ness of nut semi-finish.	Pitch.	Short Diam-eter.	Thick-ness of nut finished.	
Inch.		Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
1-4	.....28	3-8	7-32	20	7-16	3-16	
5-16	.....24	1-2	17-64	18	17-32	1-4	
3-8	.....24	9-16	21-64	16	5-8	5-16	
7-16	.....20	11-16	3-8	14	23-32	3-8	
1-2	.....20	3-4	7-16	13	13-16	7-16	
9-16	.....18	7-8	31-64	12	29-32	1-2	
5-8	.....18	15-16	35-64	11	1	9-16	
11-16	.....16	1	19-32	—	—	—	
3-4	.....16	1 1-8	21-32	10	13-16	11-16	
7-8	.....14	1 1-4	49-64	9	1 3-8	13-16	
1	.....14	1 7-16	7-8	8	1 9-16	15-16	

In the new standard the threaded portion of the screws is one and one-half times the body diameter.

These proportions are intended only for steel screws; screws to be used in soft material like cast iron, brass, bronze or aluminum are to conform to the old standard.

Not the least important recommendation is that regarding the quality of the material of which the screws are to be made. Screws now in use have a tensile strength of from 50,000 to 60,000 lb. per sq. in. and an elastic limit of about 35,000 lb. The new screws are to have a tensile strength of not less than 100,000 lb. per sq. in. and an elastic limit of 60,000 lb.

The Golden Tilting Steam Trap.

One of the newest products of the Golden-Anderson Valve Specialty Company, Fulton Building, Pittsburgh, Pa., is the Golden high and low pressure automatic tilting trap, shown in the accompanying illustrations. The special claims made for this trap are with respect to its simplicity, durability and efficiency. It is claimed to be positive at all times; to show instantly by a glance whether it is working properly or not; to give the full area through the discharge valve, and to discharge promptly and quickly, and with practically no noise. All working parts are bronze and removable when necessary. It is a valve suitable for all varying pressures up to and

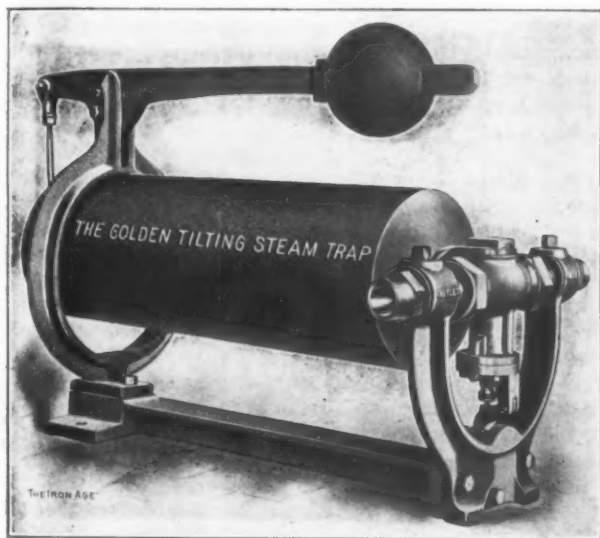


Fig. 1.—The Golden High and Low Pressure Tilting Steam Trap.

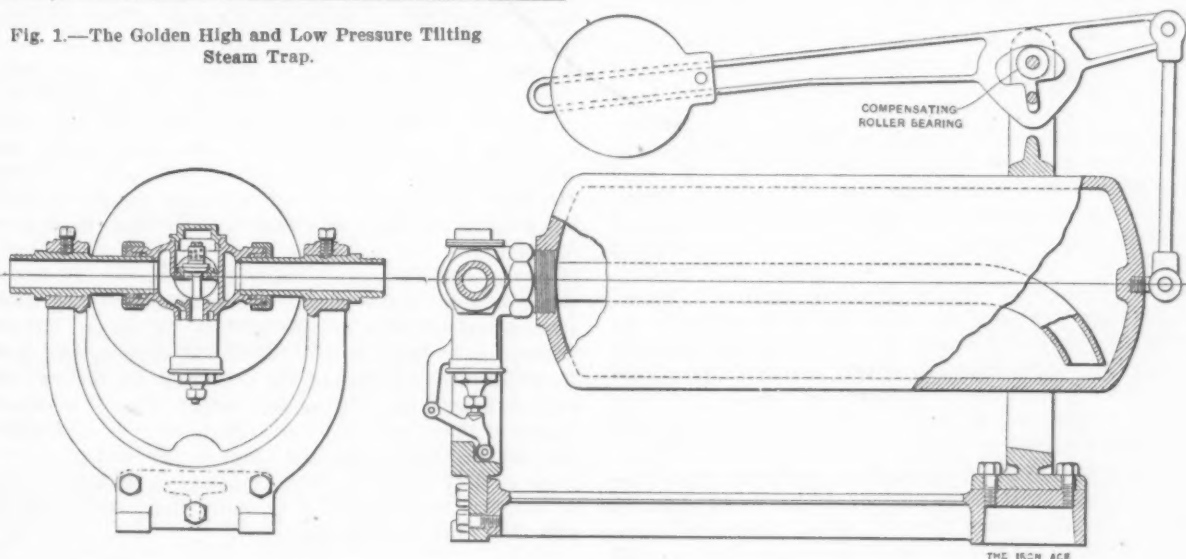


Fig. 2.—End and Side Sectional Elevations of the Golden Steam Trap, Made by the Golden-Anderson Valve Specialty Company, Pittsburgh, Pa.

including 275 lb., and giving a full area of discharge it will handle a very large volume of condensation.

Fig. 1 shows a general exterior of the trap, and Fig. 2 an end view, partly in section, and a longitudinal side sectional elevation. From the latter the operation of the trap may be understood. It is as follows: The condensed steam entering the trap through the trunnions passes through the curved interior pipe, discharging near the outer end of the receiver. As the receiver gradually fills its weight overcomes that of the counterbalancing lever, and the receiver drops at its outer end and concurrently the lever shifts its pivoting point, so that the trap is allowed to discharge entirely before the weight is sufficient to restore the trap to the horizontal position. When completely discharged the balance weight on the lever causes the receiver to tilt back to its filling position, which releases the auxiliary valve, allowing the main valve to close without shock or jar. At the same time

the lever assumes the position shown in the illustration, and the pivoting point is again shifted so that the receiver will not tip down until a full charge has been accumulated in the receiver. The tilting action of the receiver opens or closes an auxiliary valve, allowing the steam pressure to act on a piston, which in turn opens and closes the main discharge valve controlling the outlet in the trunnion. The compensating roller bearing in the lever eliminates the damaging feature of sudden opening and closing of the valve that exists in ordinary tilting traps. The Golden trap has no floats, no valves and no buckets inside of the trap. All of its working parts are outside. No wrenches are required, it being only necessary to tighten the trunnion nut by hand.

The valves are made in sizes of inlet and outlet ranging from $\frac{1}{2}$ to 4 in. The smallest has a capacity for draining 10,000 ft. of 1-in. pipe, based on a pressure of 50 lb. at the trap, and the largest has a capacity of 160,000 lineal ft. The main valve, as explained, is an auxiliary operated valve, and is entirely of bronze and of a heavy pattern. The trunnions are bronze, and, in fact, all working parts are bronze and are extra heavy. The receiver yokes, base plates and balancing ball are cast iron: the lever is malleable iron and the piping wrought iron.

The Westinghouse Air Brake Company.

The stock of the Westinghouse Air Brake Company, Pittsburgh, Pa., is now on a 30 per cent. basis yearly, while its earnings are at the rate of 32.95 per cent. annually on the \$11,000,000 capital stock, as shown by the report, just issued, for the year ended July 31 last. It is one of the most profitable industrial corporations in the United States. In 1900-1901 dividends at the rate

of 25½ per cent. were paid; in 1901-1902 and 1903-1904 the rate was 24 per cent.; in 1904, 21 per cent., and in 1905, 20 per cent.

According to the annual report the total income for the last fiscal year was \$10,546,398, an increase of \$2,587,828 over the 12 months preceding. The surplus, after charges for depreciation, was \$3,625,749, an increase of \$666,970. The year 1905-1906 was the most profitable in the history of the company, having been approached but once. This was in 1902-1903, when the total income was \$9,179,588.

Last year's net earnings were \$4,013,111, or \$1,054,332 greater than for 1905. The profit and loss surplus increased from \$3,914,129 in 1904 and \$4,674,693 in 1905 to \$6,101,148 in 1906. Since July 31, 1905, the assets of the company were increased by \$1,962,877, being mainly in the items of cash, accounts and bills receivable, stock in associated companies and factories.

Two Men in Two Deep Ruts.

A Study of American Export Methods.

BY S. D. V. BURR.

We are very prone to blame the barbarian and him of semicivilization because they prefer the hand methods of their forefathers and ignore our labor saving appliances. We do not understand why they should stick to a forked branch when we can send them a beautiful chilled plow; we are really sorry they cannot see the advantage of our devices, the outcome of our genius, and will still persist in using their own, or those of other make than ours. We draw down our faces, assume a sad air and say: "They are in a rut." That is true; and the rut is very deep and very narrow. We are astonished that they do not scramble out, forgetting that it is hard to kick over the traces of an environment of centuries. That rut was dug during hundreds of years of doing the same thing in the same way.

If the American will exercise a little honest self examination he will perceive that he is in a rut deeper and narrower than that occupied by either the dark man of Africa or the man of the Far East. He will also find that the rut is of his own digging, fashioned after his own design, and is stamped with his own personal trademark. It is such a grand specimen of a rut that it deserves to be classed as a discovery and not as a mere invention. He has knowledge enough to get out of that rut, but lacks wisdom to apply the knowledge; he could if he would, but he won't.

What the American Does Not Try to Know.

For many years the American has been seeking a foreign market for his machinery, particularly in the rich and undeveloped, but developing, countries of Asia, Africa and South America. He follows precisely the same trade methods now that he did at first, when he sent warming pans to Cuba, not knowing that they make elegant skimmers in the sugar factories. At the present time he knows lamentably little about the character of the people he would like to deal with, and he is making practically no effort to learn their customs and requirements. Climatic conditions he is not bothered with at all. He has never studied, and to-day is not studying, the circumstances under which his machines will have to work. He knows they will work in the wilds of the Dakotas and amid the refinements of Connecticut, and, therefore, they will work anywhere and under any and all conditions.

The American ships his goods in ton cases when they are to be lightered from the vessel; he packs them in 1000-lb. packages when they are to be transported mule back; he sends open bearings to the Sahara Desert; and the trouble is he does all this when he knows better. But he is only firm, not obstinate. He sends tons of beautiful literature, written in perfect English and embellished with the finest engravings, to countries that only know a mighty little even of their own tongue. A personal representative he has heard of—but only the slow going Germans do that trick—but he does not believe in that way of introducing his wares to a distant people. He makes his machine 10 ft. wide and is not troubled as to whether it will go through the custom house of the country or not; that is the way he has always built it and if they don't want it they can leave it alone. If an American purchaser wanted that same machine turned upside down with the legs waving in the air he would cheerfully build it that way, under the impression that the purchaser knew what he wanted and since he was willing to pay for it he ought to have it. But the pleadings of all the wild men of Borneo would not induce him to add half an inch to the length of an unimportant screw. The American is constituted that way and perhaps he cannot help it. The whole thing is a case of a great deal too much independence and too little common sense. But, as intimated before, he is not

learning; if he only showed a small degree of advancement the case would not appear so hopeless.

The Conviction That American Products Are the Best.

We certainly know of one cause of the trouble. The American manufacturer has, deeply embedded in his make up, the conviction that his products are the best on earth. He is also satisfied they are suitable for any country under the canopy, just for the simple and sole reason that they are adapted to his own land. He shuts both eyes and then fails to see any difference in the conditions that may surround his appliances when used abroad. And, further—and this seems a wonderfully short sighted policy—he will exert no effort to find out how, or where, or by whom the devices are to be used. He knows they will work, and that settles it as far as he is concerned. He sees one sale, but for some reason he cannot see the second; and as for building up a trade he has not even the faintest conception of the steps to take to do it.

In the fatherly interest it takes in his welfare the United States Government has located consuls all over the earth. Through the reports of these representatives he is kept in touch with the trade requirements of distant peoples. He has been told, time and again during past years, what will sell in certain countries and what will not sell; the kind of machine has been specified, and even the details of the packing have been described. Those who have read the consular reports must have been impressed with the repetitions that occur; the second chapter differeth not from the first, and the third is like unto the second, and so on. They abound in instructions that must be followed if the trade of any particular country is to be obtained and retained. The manufacturer is told what he must do and what he must not do, but, *cui bono?*

The Government money is wasted, the temper of the consul is ruined, because he is the man on the spot upon whom all the kicking is performed, and trade is sent to Europe. The American sits himself down on a stump and growls about what fools there be in this world, forgetting the shape of his own head gear. He will prate about the advantages of a large merchant marine, but will do nothing toward filling the holds of the vessels. He forgets that ships are not built just for the pleasure of carrying the Stars and Stripes to the outermost parts of the earth.

He knows two most essential facts, but he knows them only to ignore them. He knows there are many rich countries with which his trade is worthless. He also knows, but he hates to think of it, that the people of those countries are not crying for anything he makes. He further knows, but will not act upon it, that if he wants a part of that business he must go after it in a straightforward manner, displaying some energy and exhibiting some anxiety to get it. You cannot pitch an article even to heathen, especially if they think they don't want it, and then grab their money.

The Germans Have Ideas of Their Own.

The American builder should uproot the idea that all German appliances are founded upon ideas stolen from him. Once in a while the German has an idea of his own, the result of the working of his own private lot of gray matter. The foreigner has not always followed along the path the American pointed out; in many cases the poor outlander has done a little pioneer work himself. If the American will go to the nearest public library and obtain a book on the history of education he will find that the kindergarten system originated in Germany. Having absorbed a little of this he will easily perceive that the Germans are applying that system to their trade methods of introducing their machinery. They train themselves first as to the conditions of the country they expect to trade with, and then they train the natives of that country. A mutual acquaintance is fostered. Froebel did not advocate teaching conic sections to the infant; neither does the German thrust a refined product upon a people to whom a jackknife is an intricate mechanism. They first do the necessary missionary work along mechanical lines. A consular report only a few days old contains the following:

American manufacturers might well co-operate in sending out representatives to report to them direct if they are in earnest in wanting Egyptian trade. For example, all those interested in the manufactures included in machinery, iron and steel, metals, hardware, . . . should have no difficulty in coming to some mutual arrangement, the cost of the mission being divided. The biggest field for the expansion of American trade being in iron and steel, these are mentioned as an illustration of such commissions. It should consist of a skilled mechanical engineer, a foreman founder and a trade expert perfectly informed as to the cost of production in the United States. The duties of the commission would be to examine machinery under cover and in the open all over the country, from the moist and salt atmosphere of Alexandria to the heated and sand charged air of Upper Egypt; to examine stocks carried of all iron and steel, brass and copper, lead and tin and other wares, whether in the rough or finished. The commissioners should interview and collect all possible information from the engineers in charge of factories and machinery used on the large estates, and in particular should examine thoroughly American machinery relegated to the scrap heap.

One thing may be taken for granted: the Cairo consul never evolved the idea out of his own inner consciousness. That method has been followed by the Germans, either in groups or as individuals, for many years in all parts of the world, and their secure trade foundation has been directly due to its working. Further, the advice will bear no fruit, although it is sound and sensible. The American knows all about that policy and he doesn't like it. He much prefers his own utter lack of system, even when he is satisfied that it will not be to his benefit. He would seemingly rather go without the trade than go after it in any such fashion.

Careless Packing.

Upon the subject of careless packing the consul at British Honduras says:

Years ago, and yearly thereafter, consular and departmental trade reports have called the attention of exporters to this vital point. It seems strange that so practical a people in all other branches of trade should devote so much time and scientific labor to the production of the most advanced manufactures, in many cases more or less fragile, and after such achievement turn over the products to some "handy man" for packing, when they should be turned over to the most scientific force in the factory or warehouse. What particular economy is fulfilled in dumping wares which have been so scientifically produced, in crates, bales, boxes and barrels and consigning them to transportation companies to be tossed about and broken up in the rough handling to which all exported goods are subjected, it would be difficult to say. It is full time that our manufacturers awoke to the fact that for export all their time and labor are more than wasted if the products do not reach their destination in good condition.

This poor consul says he has been harping upon that one topic for years. He certainly possesses his soul with patience. His effusions will do no good and he might better restrict his energy to personal matters in his immediate neighborhood. Complaints of similar character appear every month, sometimes oftener, from every quarter of the globe to which American products are sent.

Overwhelming Conceit.

The keynote of the whole matter may be found in the overwhelming conceit of the American producer. He is thoroughly convinced that he makes the best of everything, and if other folks do not want it it is their loss and not his. The consul at Rheims hits the nail a square blow when he says: "Do not expect to ride roughshod over local traditions and customs. American goods cannot be sold that way." It would be well if the American quit accusing the Germans, and more recently the Japanese, of stealing his ideas, and copied the trade getting methods of the former. His own personal opinion counts for nothing in the markets of the world; if he has the best he must prove it, and the proof must be presented in a sensible way. He should not forget that in these days of grace courtesy will get more trade than a blunderbuss.

The result: While he is sleeping the foreign markets of the world are being occupied by his rivals, who certainly display a modicum of common sense when they make an effort to enter an untried field.

Now, of the two men, each in his own deep and narrow rut, one deserves pity and the other censure. One had his rut thrust upon him and needs help to get out; the other built his own rut, so deep that he has to reach up to touch bottom, and yet out of which he could easily climb if he wanted to.

A Gas Driven Electric Power System.

The only gas engine power plant of its kind in existence is said to be that of the Warren & Jamestown Electric Street Railway at Warren, Pa., which is described in an interesting paper recently presented by J. R. Bibbins before the mechanical section of the Engineers' Society of Western Pennsylvania. Primarily the paper deals with the gas power plant, although some essential features of the electric railroad system are incidentally mentioned. The plant has a capacity of 1000 hp. in two units, and there is no dependence upon a steam reserve. The system has a total length of 42 miles of track, half city and half interurban. The engines are of the horizontal double acting tandem four-cycle type built by the Westinghouse Machine Company, having 21 x 30 in. cylinders and running at a speed of 150 rev. per min., and are directly connected to revolving field engine type solid coupled Westinghouse alternators generating 300-volt three-phase 25-cycle current.

The load is of an extremely variable character, imposing upon the gas engine the most severe service possible, except perhaps that of a rolling mill. The author considers the following points to have been proved from the operation of this Warren gas engine plant: That gas engines are able to handle variable loads; that regulation suitable for alternating current parallel operation is possible; that the effect of misfires is negligible; that sufficient reliability for regular service is had; that the deterioration from wear is quite normal; that the general character of labor required is not above the ordinary; that oil and water consumption is low (automatic systems desirable), and that an automatic starting system is quite sufficient for any emergency.

The fuel cost for the plant has been from \$10 to \$12 a day. This for a 42-mile road clearly indicates the economy of gas power, especially with the price of gas equivalent to \$4 coal. About \$31 per day, or \$1.67 per running hour, covers the cost of operation, including fuel, labor and supplies and repairs. This figure corresponds to 0.11 cent per ton mile, or 3.8 cents per car mile, for the interurban system alone. With the city system serving to increase the load factor of the plant the total operating cost per ton mile was reduced to 0.05 cent, and the cost per car mile to less than 0.01 cent. The engines in this plant are of the same type as those installed in the Carnegie Technical Schools plant and described in *The Iron Age* of May 17, 1906.

The Delphos Can & Mfg. Company.—This company, successor to the Delphos Can Company, Delphos, Ohio, has made extensive enlargements in productive capacity. A number of new buildings has been erected. One of these is 60 x 144 ft., two stories, intended for the manufacture of eaves trough, conductor pipe and elbows. One building to be used for stock is 60 x 60 ft., two stories. A building for the galvanizing department is 60 x 200 ft., one story, having a capacity of 60 tons in 24 hr. Other buildings comprise a warehouse, 30 x 70 ft., two stories, and an office building, 20 x 40 ft., two stories, all of brick. These structures, together with the old building, 60 x 180 ft., three stories, cover over 4 acres of ground adjoining the main line of the Pennsylvania Railroad, to which ready access is had directly from factory to car, while in addition a switch to the same line runs through the company's premises, thus affording every convenience desired for the prompt handling of incoming and outgoing freight. The new company takes over the business of the Delphos Can Company, comprising its entire line of oil cans, oil pumps and other oil specialties, and in addition will at once manufacture a full line of eaves trough, conductor pipe, elbows, &c., and later a line of galvanized tubs and pails.

The Passaic Steel Company, Paterson, N. J., will establish a branch office at 170 Broadway, corner Malden lane, New York, in charge of H. B. Thomas, September 24. H. V. De Hart, general sales agent, will continue to maintain his headquarters at the general office at Paterson, but expects to divide his time between the two offices.

The Hanna Portable Radial Reamer.

It has become common in bridge and structural iron and steel work to specify that all rivet holes be reamed after punching and assembling, and the increasing tendency to use large, heavy and unwieldy members has indicated the need of a reaming machine that may be taken to the work and moved about and that will have sufficient power to drive positively the correct feeds for high speed drills operated to their limit. With the object of providing such a machine, capable of quick and easy adjustment and handling, the Hanna Engineering Works, Chicago, has produced the portable radial reamer, two views of which are herewith presented.

The base of the machine is of such weight and size that with the rail in its highest position and the head at the extreme end of the rail, as in Fig. 1, there is no

are supplied for moving the head on the rail, though they are seldom used, as the head is mounted on wheels, which allows it to be pushed in or out on the rail without much exertion.

The column is bolted solidly to the base, and the rail is mounted thereon on roller bearings in such a manner that when the base is level and the head is at the extreme end of the arm a horizontal force of 35 lb. applied on the spindle will easily swing the rail around the column. The rail is raised and lowered on the column by manipulating a slip gear clutch and reversing switch in the motor circuit. The clamping is such that no extra strains are put on the roller bearings. The gears are cut from solid steel. The complete machine weighs approximately 10,500 lb.

Two of these machines have been installed, one in the shops of the Pennsylvania Steel Company, Steelton, Pa.,

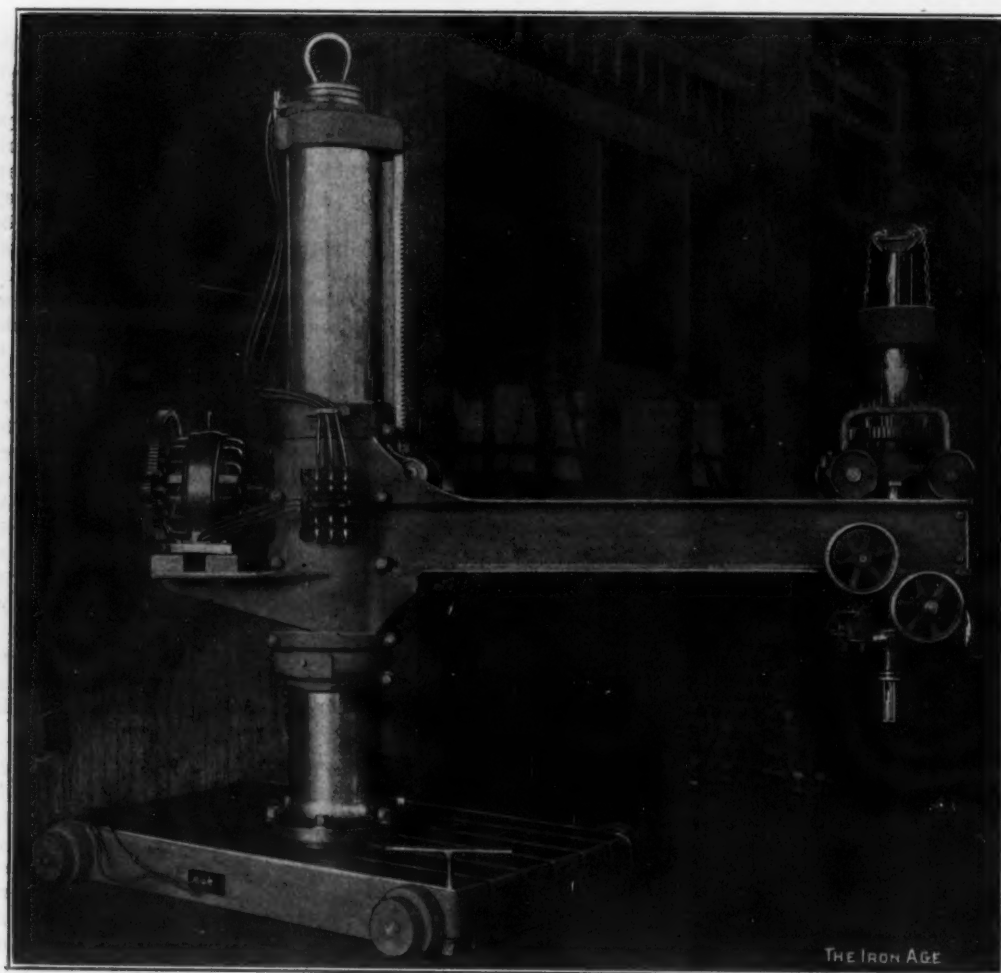


Fig. 1.—A Portable Radial Reamer Built by the Hanna Engineering Works, Chicago.

need of bolting it to the floor or a foundation. In every sense the machine is entirely self-contained. At each corner of the base there is a screw jack for taking the weight off the wheels so that the machine will remain stationary while in operation and may be readily aligned with the work. These wheels have a tread for running on T-rail track, as well as a wide flange for bearing on the flat floor in case rails are not used. The wheels are operated by a ratchet lever.

The machine is driven by a $7\frac{1}{2}$ -hp. alternating current Westinghouse motor mounted on a bracket at the rear of the rail bearing on the column. The motor is directly geared to the spindle through a speed changing gear box giving eight changes suitable for reamers from $\frac{3}{4}$ to $4\frac{1}{2}$ in. in diameter. Four positive gear driven feeds are provided, ranging from 0.007 to 0.054 in. per revolution. The spindle has a vertical feed travel of 18 in., and a range of movement on the rail from 20 in. from the center of the column to 7 ft. 8 in. at the end of the rail, and the rail may be raised to a greatest height of 6 ft. 3 in. above the top of the base. A rack and pinion and a hand wheel

and one in the Smeeth Company, Chicago, where the builder claims they are giving excellent satisfaction.

The coercive force and the hysteresis loss in steel seem to increase with an increase in the silicon content, but the maximum induction appears to be only slightly influenced. The disadvantage of largely increased hysteresis loss far outweighs the corresponding gain in lower electrical resistance, hence the effort should be, in the case of sheet metal, to keep the silicon as low as consistent with the other factors in the case. In cast steel, on the contrary, the results seem to be quite different. The electrical resistance is notably increased, while the properties of permeability, remanence, and maximum inductance undergo scarcely any alteration.

The Transvaal gold output for August broke all previous monthly records, the total for the first time in the history of the industry exceeding half a million fine ounces. The exact yield was 509,115 ounces.

Guest, Keen & Nettlefolds, Limited.

The annual meeting of Guest, Keen & Nettlefolds, Limited, was held at Birmingham, England, August 30. As this is one of the great English iron and steel companies the proceedings are of interest to many on this side of the Atlantic. At this meeting the chairman reported that the company had had a good year, not because trade had been buoyant, but because there had been a fairly increased activity and demand in British trade. The total sales had shown a satisfactory increase and were the best the company had had during the five years in which it had been carrying on its operations. In the iron and steel departments the company had done better than in the colliery department, but owing to increased value more than increased demand. This was because foreign competitors, especially Germany and America,

on June 30, 1906, to £167,145. The company has paid 10 per cent. annually on the common stock for the past five years.

The business of this company is stated to date back to 1853. In 1864 it was registered as a corporation, the name then being the Patent Nut & Bolt Company. In 1900 the first great expansion took place, in which year the properties of the Dowlais Iron Company and Guest & Co., iron and steel manufacturers, colliery proprietors, &c., were absorbed. These concerns had been in operation for over 150 years and ranked among the largest producers of coal, iron and steel in South Wales. Included in the business of Guest & Co. was a large interest in the important mines of the Orconera Iron Ore Company, in the north of Spain. Further expansion took place in 1901, when Guest, Keen & Co., as the company was called after the acquisition of the South Wales proper-

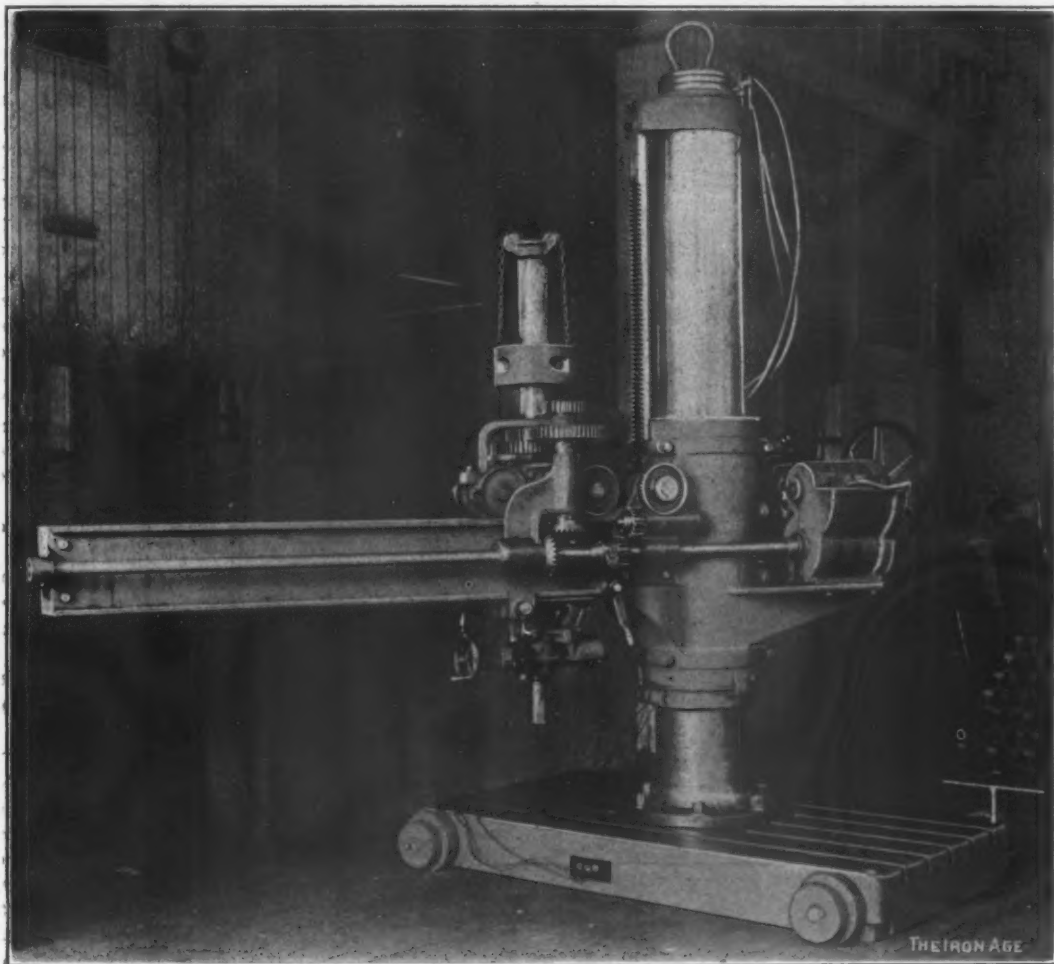


Fig. 2.—The Hanna Portable Reamer, Showing the Opposite Side of the Rail.

were very busy, and in consequence the company at present is able to compete more successfully and on better terms than it had been able to do for some time. In the departments producing the smaller manufactured goods the company had had to meet very severe competition from home and abroad, but it had held its own and maintained its markets. During none of the previous years had the amalgamation been of so much service to the company in resisting the attacks of its opponents in these departments as it had during the past year.

The capital of the company, including debentures, is placed at £4,535,500. The profits for the 12 months ended June 30 reached a total of £427,156, as compared with £407,557 the previous 12 months. After providing for interest on debentures and dividends on preferred stock a balance was available for distribution on the common stock of £270,837. A dividend of 10 per cent. was declared on the common stock, which required £96,500, thus leaving a surplus of £174,337. Of this surplus £150,000 was placed to the reserve fund, which amounted

ties, acquired the business of Crawshaw Brothers. The most important step, however, was taken in the early part of 1903, when it was announced that an amalgamation had been brought about between Guest, Keen & Co. and Nettlefolds, Limited, the well-known Birmingham firm of steel and wire manufacturers. By means of these various amalgamations the company has command of its raw material and is thus to a large extent, if not entirely, rendered independent of outside sources of supply. Commenting on these developments the *London Statist* says:

"Both Guest, Keen & Co., Limited, and Nettlefolds, Limited, were recognized as most progressive and go-ahead concerns. The chairman of Guest, Keen & Co. visited the United States four years in succession in order to obtain the fullest knowledge of the most important machinery and efficient methods of working prevalent over there, so that all possible improvements based on American working could be introduced in the works on this side."

Amos Whitney.

Amos Whitney, one of the founders of the Pratt & Whitney Company, Hartford, Conn., and Mrs. Whitney celebrated their golden wedding at Hartford, September 8, a great circle of friends joining in the festivities, which marked the important anniversary. More than 1000 people attended the reception given by Mr. and Mrs. Whitney at their residence, where they were assisted in receiving by Mr. and Mrs. Clarence E. Whitney, Miss Whitney and George F. Whitney. Mr. and Mrs. Whitney were married in Hartford in 1856, Mrs. Whitney then being Miss Laura Johnson. Clarence E. Whitney and Miss Nettie Louise Whitney are the surviving children.

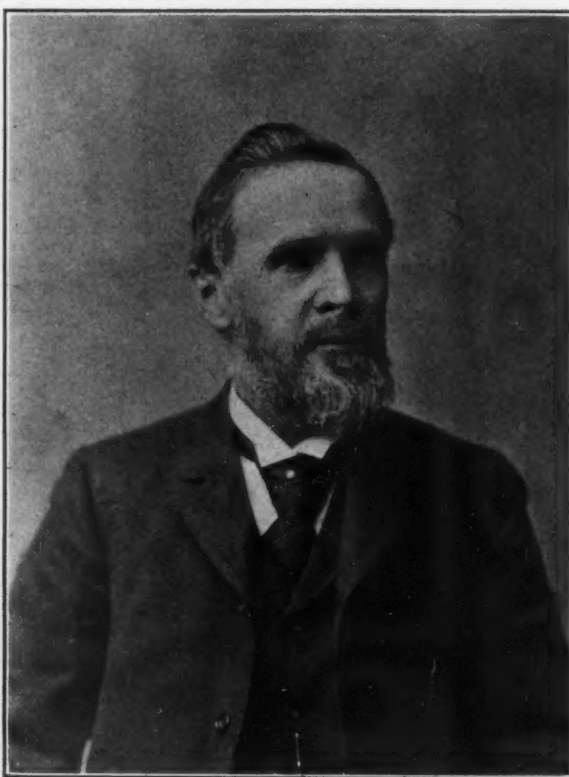
Though approaching his seventy-fourth birthday Amos Whitney still fills an active and important part in the industrial life of Hartford, after more than half a century of busy manufacturing experience. The corporation that bears his name is known the world over as one of the greatest of its kind. Its name has always been identified with machinery and machinists' tools as denoting a standard of excellence. The two great New England names of Pratt & Whitney and Brown & Sharpe have for years been linked together everywhere that metal is fashioned, and Mr. Whitney has the enviable and honorable distinction of being not only a founder of one of these great establishments, but also one of the men who have carried it through from a small beginning to its great proportions of the present day. He is still a director of the corporation, though taking a less active part in its management than he did up to a few years ago. His career is one of unusual interest and importance.

He was born in Biddeford, Maine, October 8, 1832, of old New England stock. His father, Aaron Whitney, was an expert locksmith and machinist. Amos Whitney received his early education in the village schools, and at 14 years of age was apprenticed to learn the machinist trade with the Essex Machine Company, Lawrence, Mass., where his family was then residing. The shop was a large one for its day, manufacturing cotton machinery, locomotives and machinists' tools and his apprenticeship was served on the latter work. He remained with the company for a year after the expiration of his apprenticeship; his employers were glad to keep him for he had become an expert at his trade. Then he followed his father to Hartford, to the Colt factory, where both were working as machinists in 1850. It was there that Amos Whitney and Francis Pratt came together, forming a friendship which was the foundation of their future business association. Mr. Pratt soon after went to the Phoenix Iron Works as superintendent. Mr. Whitney followed him in 1853, leaving a contractor's job which earned him \$8 a day for one worth about \$2, because he believed that the experience to be had in working on machinery would be vastly more valuable to him than that of pistol manufacturing, and this decision was reached in spite of strong effort on the part of the Colt management to persuade him to remain there.

The firm of Pratt & Whitney had its beginning in 1860, in a little device known as a spooler, used in textile manufacturing. Messrs. Pratt & Whitney saw in its

manufacture the opportunity to make some money, and they formed a partnership and established a small shop in an old car factory. The owners continued their duties at the Phoenix Works. In the beginning two men were employed and the number had increased to 12 when their shop was destroyed by fire. A room was taken in another building, and soon that entire structure was occupied. Before the end of the Civil War 100 men were employed. Mr. Pratt had invented a milling machine, which became an important product and of which since that time the sales have run into the thousands. Monroe Stannard had been taken in as a partner to run the shop, but it became necessary for the founders of the business to devote their own time to its conduct, and in 1864 they left the Phoenix Iron Works. The first building of the present great plant was erected in 1865. Seth Bishop and R. F. Blodgett were taken into the firm. The business continued to increase rapidly, and its progress of that period, 40 years ago, has continued up to the present time. In 1869 the Pratt & Whitney

Company was organized and incorporated, with a capital stock of \$350,000. Capital and the business have grown together. Mr. Whitney was vice-president of the company and superintendent of the works, and in 1898 was made its president. Under the alliance with the Niles-Bement-Pond Company he is a director of the Pratt & Whitney Company. He has other manufacturing and general business associations, as secretary and treasurer of the Whitney Mfg. Company, of which his only son, Clarence E. Whitney, is the president; as director of the Pratt & Cady Company and of the Hartford Falcence Company and as president of the Gray Telephone Pay Station Company.



AMOS WHITNEY.

Automobile and Motor Cycle Duties.—Reappraisements made by the Board of United States General Appraisers last week indicate that the lower customs tribunal is sup-

porting the Treasury Department in the latter's campaign for higher values on imported automobile parts and motor cycles. Heavy advances over invoice prices on cycles from Peugeot Bros. of Valentigney were imposed by the Custom House authorities, and their action is now affirmed by the Board of Review. The automobile parts were from Boas & Rodriguez, Paris, and included cylinders, lanterns, generators, &c. The invoice values on most of the merchandise was unsatisfactory to the collector, and duty was accordingly assessed on a higher basis. An appeal to the Board of Appraisers did not materially reduce the values fixed by the collector. The board has settled a dispute regarding the value of a 32-hp. automobile shipped to New York by the Italian Automobile Works, Turin. The machine was invoiced at 10,500 lire. This valuation was deemed too low by the appraising officers and duty was levied on a higher valuation. The board holds that the machine was correctly invoiced. The return of the excess duties collected is ordered.

The Canadian Manufacturers' Association is holding a meeting this week in Winnipeg. About 200 members are in attendance.

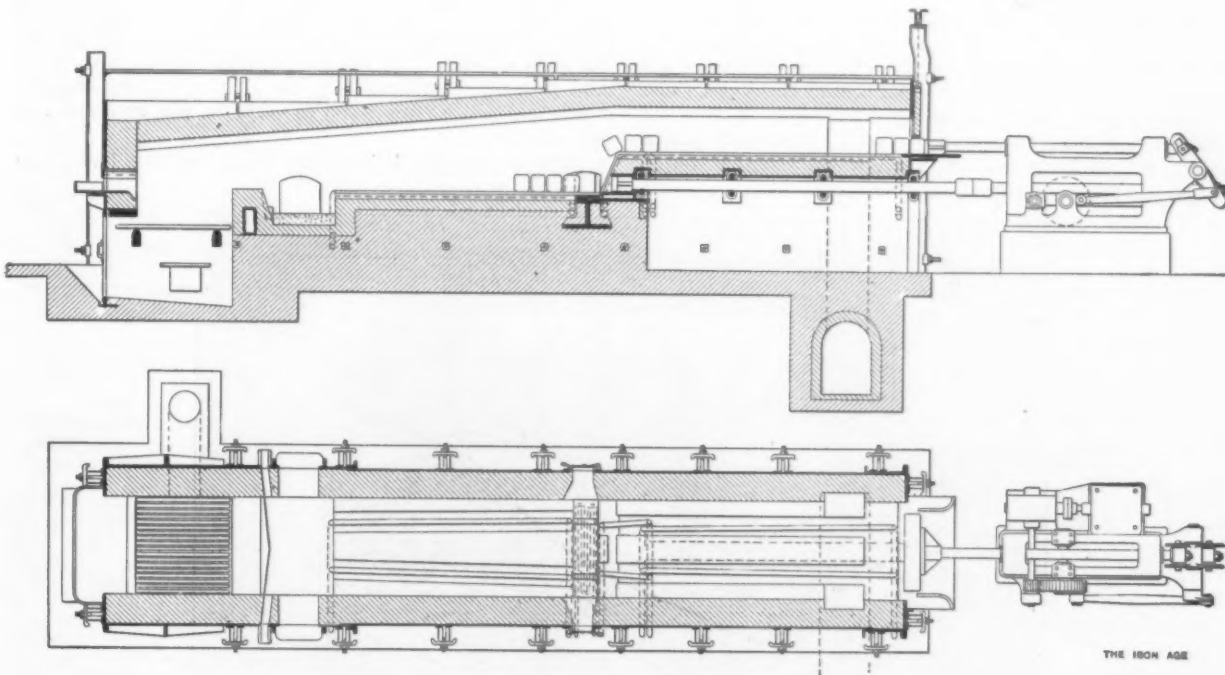
The Guettler Bloom Heating Furnace.

Paul Schrader of Iserlohn, Germany, describes in a recent issue of *Stahl und Eisen* the Guettler bloom heating furnace, equipped with a charging and discharging apparatus, designed by the firm of Ludwig Stuckenholtz of Wetter a. d. Ruhr. The accompanying drawings show the design. The furnace is about 32 ft. long and is used

be turned 90 degrees occasionally and be renewed from time to time.

The descent from the upper to the lower hearth is an incline to avoid shocks in dropping, but is so steep that the blooms turn 90 degrees. The blooms drop upon a special water cooled casting.

The arrangement of two hearths possesses a number of advantages. The power for moving the blooms is

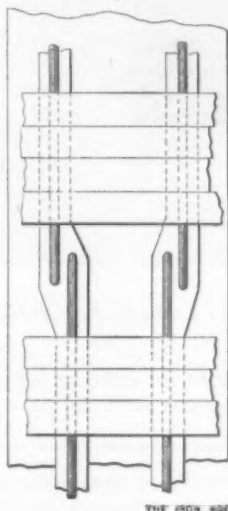


Vertical Section and Horizontal Section of the Guettler Bloom Heating Furnace.

to heat blooms $7\frac{1}{2}$ in. square and weighing about 660 lb. The furnace has two levels about 13 ft. long.

Through a motor the double pusher is driven by gearing through an adjustable connecting rod coupled to a double armed lever. The pushers have a stroke of 16 in., which, however, may be adjusted. While the upper pusher moves along the charging level the lower

lessened. The blooms before they drop from the upper to the lower hearth are sharply heated on the very surface which was made inaccessible to the flame by the neighboring blooms. The blooms are turned and thereby a third surface is exposed to the heat, and that surface of the bloom which was lying on the water cooled pipe is turned to the vertical position and the black spots are heated up. The slides are not placed parallel to one another, but are staggered, as shown in the accompanying sketch. The object is to avoid black spots, caused by the water cooled slides, by having the blooms rest on another spot. The furnace is to be introduced at the Peine Works.



Sketch Showing Staggered Slides.

pusher, resting on rollers, operates below the upper hearth. When the upper pusher moves the series of blooms by the thickness of one bloom the lower pusher is withdrawn and gets out of the way of the bloom, which falls from the upper to the lower hearth. When the upper pusher is withdrawn the lower advances and pushes one bloom before the discharging door.

The blooms slide on water cooled pipes, which must

At the conclusion of an extended series of tests the Navy Department has decided to use a type of 3-in. gun manufactured by the Driggs-Seabury Ordnance Corporation, Sharon, Pa. The importance of this decision grows out of the fact that the Navy Department has practically adopted the policy of using only two classes of guns upon its battleships in the future. These classes consist of 12 or 13 in. guns for the main batteries and the 3-in. guns for a secondary battery. The first award which will be made through the adoption of the Driggs-Seabury type will be 25 guns, to be used in the battleships now under construction. Aside from these 25 which are to be built at Sharon 67 guns of this type are to be manufactured at the Government navy yard under the authority of the Driggs-Seabury Company.

A Glasgow cable dispatch states that a combination of Scotch and English steel tube manufacturers has been formed to regulate the home and export business, with a view of abolishing the present keen competition. The industry has suffered incalculably since the previous agreement between the firms in this line was canceled 18 months ago. It is understood that the new combination is wider in its scope than the old one, taking in all the firms in the United Kingdom except one Clydeside concern.

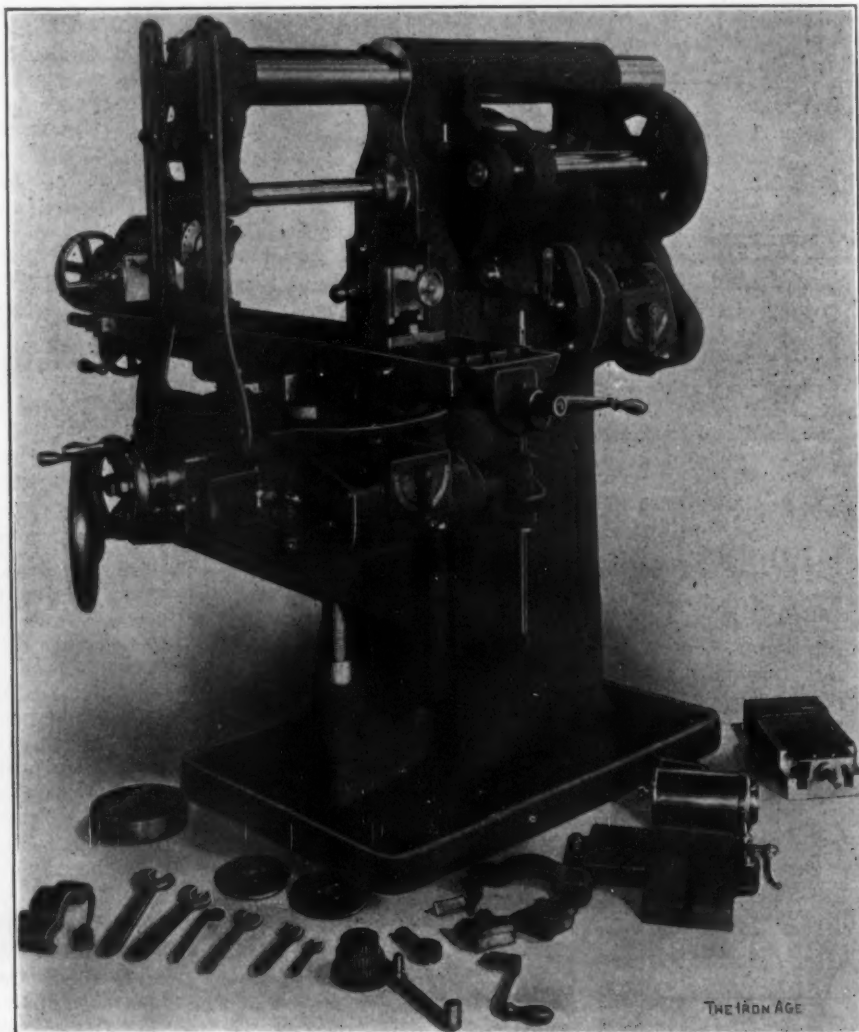
The Owen No. 2-A Universal Miller.

In the new universal miller, No. 2-A, recently brought out by the Owen Machine Tool Company, Springfield, Ohio, it has been particularly aimed to meet the modern requirements of high speed milling. For this reason it is regarded as well fitted for general manufacturing purposes. The principal changes made in the machine are as follows: The chain drive has been eliminated and the machine is now driven by intermediate gears, and the machine in general has been made much heavier, the metal being distributed mostly in the column, front spindle bearings, the base of the column and the knee. The column is very heavy at the front spindle bearing, at which point there is a severe strain. The table has a double bearing surface, which gives the machine ample

the end. The universal head and foot stock centers swing $10\frac{1}{2}$ in. and take $20\frac{1}{2}$ in. between them. They can be set at any angle, from 10 degrees below the horizontal to 10 degrees beyond the perpendicular. The foot stock center is adjustable vertically.

The table of the machine has a longitudinal movement of 26 in., a transverse movement of 7 in., and a vertical movement of 18 in. Its dimensions are $9\frac{1}{4}$ x $44\frac{1}{2}$ in., leaving a working surface of $9\frac{1}{4}$ x 41 in. The table has three T-slots, $\frac{5}{8}$ in. wide. The vise is the No. 2 swiveling pattern, having a graduated base, and can be set at any angle. The jaws are $6\frac{1}{4}$ in. wide, $1\frac{1}{2}$ in. deep, and give an opening of $3\frac{1}{4}$ in. In the 32 feed changes there is a range from 0.003 to 0.225 in. per revolution of the spindle.

The machine occupies a floor space of $79\frac{1}{2}$ in. in line



The No. 2-A Universal Miller Recently Designed by the Owen Machine Tool Company, Springfield, Ohio.

rigidity. All gears throughout the machine are made of steel. The universal millers now constructed by this company are provided with 32 changes of feed, and the tables have double bearing surfaces.

The feed is gear driven, being positive and automatic. The levers for making the changes are all in easy reach of the operator and the mechanisms can be engaged or disengaged while the machine is in motion without injury to any of their parts. The spindle is 1 in. in diameter and 11 in. long from the shoulder to the nut and is of forged crucible steel. It runs in phosphor bronze boxes and is threaded on the front end and provided with means of taking up wear. The diametrical swing around the spindle center is $12\frac{3}{8}$ in. The center of the spindle has taper holes, No. 10 B. & S. gauge. The back gear has a ratio of 6 to 1, and with the four speeds from the cone pulley allows eight changes of speed. The overhanging arm is 4 in. in diameter, of solid steel, and the arbor support is equipped with a bronze bushing at

with the spindle by 84 in. wide, to permit extreme limits of the table, and weighs 3000 lbs.

When the new State of Oklahoma is admitted to the Union next May it is estimated that it will have 6000 miles of railroad in operation. It has 3000 miles now, and 3000 miles more are expected to be completed by June 1, 1907. It is believed that no other State ever came into the Union with such extensive transportation facilities.

At the ninth annual meeting of the American Society for Testing Materials, held at Atlantic City, June 21 to 23, 1906, the membership was reported to be 835, as against 677 at the time of the annual meeting of 1905. A pamphlet just published giving a revised list of members shows a total of 878, of whom 255 hold membership also in the International Association for Testing Materials.

The American Steel Foundries.

The annual report of the American Steel Foundries, just issued, gives a statement of operations for the fiscal year ended July 31, 1906, being the first year of the present management. This exhibit is the first in which a full year's results of the Simplex Railway Appliance Company and the Commonwealth Steel Company (both of which are either owned or controlled by the American Steel Foundries) has been shown; hence no comparison of the net earnings with previous years can be made. Only 55 per cent. of the Commonwealth Steel Company, being the portion of that company owned by this, is included in the following figures:

BALANCE SHEET—JULY 31, 1906.

Assets.	
Real estate, plant, patents, &c., including expenditures on additions and improvements to July 31, 1905.....	\$34,034,267.62
Net expenditures on additions and improvements during the year.....	504,767.82
	\$34,539,035.44
Real estate not used for business purposes	310,365.36
Total	\$34,849,400.80
Miscellaneous securities	27,500.00
Advances to subsidiary companies	180,000.00
Inventories	\$1,949,096.31
Accounts and bills receivable (less reserves)	3,610,074.26
Cash	354,070.50
	5,913,241.07
Insurance premiums, &c., prepaid	21,808.50
Total	\$40,991,950.37
Liabilities.	
Capital stock issued—preferred... \$17,700,000.00	
Less 4,600 shares owned by the company	460,000.00
	\$17,240,000.00
Common	\$17,700,000.00
Less 18,900 shares owned by the company	1,890,000.00
	15,810,000.00
Total	\$33,050,000.00
First mortgage 6% sinking fund bonds	\$3,500,000.00
First mortgage 5% bonds of American Steel Casting Company (due November 1, 1912).....	471,000.00
	3,971,000.00
Bills payable	\$1,147,455.55
Accounts payable	1,246,200.85
Payroll accrued (not due).....	205,645.05
Accrued interest on bonds (not due)	75,887.50
	2,675,188.95
Reserves—Bond sinking fund... \$87,500.00	
Depreciation	313,101.53
	400,601.53
Profit and loss account:	
Net earnings for the year ending July 31, 1906.....	\$1,009,521.76
Less deficit at August 1, 1905	114,361.87
	895,159.89
Total	\$40,991,950.37
GENERAL PROFIT AND LOSS ACCOUNT FOR YEAR ENDING July 31, 1906.	
Earnings from operation of plants and of subsidiary companies (after deducting manufacturing, selling, administrative and head and district office expenses)	\$1,526,936.89
Other Income:	
Rentals	\$5,163.00
Interest, discount and exchange	36,511.50
Income from sundry investments	2,037.06
All other	26,306.82
	70,018.38
Total income	\$1,596,955.27
Deduct interest on borrowed money	\$48,377.33
Expenses of bond issue.....	14,634.04
Interest on bonds	192,241.30
Sinking fund for 6% bonds (10 months)	87,500.00
Depreciation of buildings, plant, machinery and equipment....	221,540.88
Purchase of patent rights written off	23,139.96
	587,433.51
Balance—Net earnings ..	\$1,009,521.76

President William V. Kelley makes a statement from which the following is taken:

"In considering the figures it should be borne in mind that they have been prepared on the assumption that the stock retirement recommended by the board will be authorized by the stockholders, for which purpose a special meeting has been called. Should it not be authorized, the net earnings will be the same and only the fixed assets and stock outstanding will be changed.

"In addition to provision for depreciation, charges for repairs, renewals, and maintenance (including patterns and relining of furnaces), amounting to \$896,255.05 have been absorbed in manufacturing costs.

"During the year \$504,767.82 has been charged to capital account, on a conservative basis, for additions, new construction, machinery and equipment, which together with previous expenditures have brought the works up to a higher state of efficiency resulting in material increased production at reduced costs.

"The gross sales were \$16,366,170.23, as compared with the previous year's sales of \$10,046,603.88. The earnings for the past fiscal year have suffered through some very unfavorable contracts (now all disposed of) which were carried over from the previous year. This is evidenced by the increase in earnings for the last half as compared with the first half, the earnings for the last half being about 100 per cent. greater than those for the first half.

"Drastic adjustments have been made in the accounts of the company. New methods in accounting, costs and records have been installed, and it is believed the figures given are accurate and conservative and may be accepted as a correct showing of the company's affairs. All due and approved current bills have been paid, and advantage taken of all cash discounts.

"During the year \$3,500,000 10-30 year 6 per cent. first mortgage gold bonds have been authorized, issued and sold to provide more working capital, which has resulted in materially strengthening the company's financial position.

"The company has come into ownership and possession of 4600 shares of its own preferred stock and 18,900 shares of its own common stock. The Board of Directors has decided it to be advisable to cause a reduction in the preferred and common capital stock of the company, by retiring the stock so owned by it, and use the surplus created by the cancellation thereof: 1, to extinguish the discount and underwriting commissions on the bond issue; 2, to reduce the book value of miscellaneous securities to a nominal sum; 3, to reduce the cost of the Simplex Railway Appliance Company investment. An obligation to finance the Commonwealth Steel Company, incurred when control of that company was purchased, about two years ago, has been met by advancing to it \$400,000 and taking therefor notes payable over a term of years bearing interest at the rate of 6 per cent. per annum. A contract for the exclusive manufacture and sale during the life of the patents has been made for the Andrews truck side frame, which has brought the company a large and profitable tonnage. The railroad coupler patents, under which the company has heretofore been making couplers on a royalty basis, have been purchased and the purchase price deducted from the earnings."

Manufacturers of high speed steel are interested in the advance that has taken place recently in the price of wolfram and other tungsten ores. The principal reason is the reduction in the output of the leading mines in Australia. There has also been an increased demand owing to the prosperity of the tool steel industry both in the United States and abroad. Tungsten metal has advanced considerably and a further rise is predicted. In British markets it is quoted at 2 shillings 7 pence to 2 shillings 10 pence per pound. The high record price is in the neighborhood of 5 shillings.

The Union Pacific Railroad announces that the experiments in the use of gasoline for propelling passenger cars have proved successful. In a trip recently made the gasoline car made an average of 45 miles per hour, maintaining it for 91 miles.

The German Steel Syndicate.

The second annual report of the Stahlwerks-Verband, for the year ending March 31, 1906, reflects the general improvement which has taken place in business in Germany and in neutral markets. The allotments were increased in a considerable number of instances. For the so-called "A Products," which include billets, blooms and muck bars, rails and fastenings, and shapes, the allotments were increased on April 1, 1905, by 5 per cent.; on December 1, 1905, by 5 per cent.; on February 1, 1906, by 1.5 per cent., and on April 1, 1906, by 5 per cent. These are the syndicated products which are sold by the Verband in both the domestic and the foreign markets and over which it has practical control, there being few outsiders of any consequence, although there are a number of open hearth steel producers who are independent. All the big basic Bessemer steel plants, with one exception, are members of the syndicate. During the year a Silesian group of steel works joined the Verband, the works in question being the Oberschlesische Eisenindustrie, Gleit-

followed by Krupp, Phoenix, De Widel, Hoerde and Gutehoffnungshuette, all of whom are above 500,000 tons.

The syndicate has been vigorously attacked by the outside rolling mills in Germany because of the low prices at which billets and sheet bars have been sold for export. The independent rolling mills and bridge shops have claimed that these low export sales have impaired their ability to compete in neutral markets for business in finished products. The officers of the Verband have maintained that the reports of low prices, which were made prior to the formation of the Verband, have been exaggerated as to their extent and that they grew out of competition from other sources. They have furthermore enunciated the principle that special concessions on steel billets and bars to be used as the raw material for rolled products for export would not be granted until the mills rolling such product had been syndicated. The officers of the Verband claim besides that it is their aim to reduce to the minimum the amount of crude steel exported and to stop senseless price cutting.

Since the days of the billet syndicate, which was suc-

Allotments of the German Steel Companies, August 1, 1906.

Companies.	"A" products.			Total "A" products.	
	Billets. Metric tons.	Rails. Metric tons.	Shapes. Metric tons.	Metric tons.	Per cent.
Aachener Hütten-Actien-Verein.....	97,915	61,560	111,469	270,944	4.6351
Eisen- und Stahlwerk Hoesch, Aktiengesellschaft in Dortmund..	48,467	79,508	64,221	192,196	3.2880
Gewerkschaft Deutscher Kaiser, Bruckhausen a. Rhein, Dinslaken und Cöln-Ehrenfeld.—Thyssen & Co.....	63,335	168,467	129,202	361,004	6.1758
Gutehoffnungshütte, Aktienverein f. Bergbau u. Hüttenbetrieb..	62,030	139,715	54,467	256,212	4.3831
Hasper Eisen- und Stahlwerk.....	9,379	.....	22,420	31,799	0.5440
Hörder Bergwerks- und Hütten-Verein.....	154,366	79,970	82,334	316,670	5.4174
Rheinische Stahlwerke.....	123,376	110,750	44,299	278,425	4.7631
Ulfon, A.-G. für Bergbau, Eisen- und Stahl-Industrie.....	74,734	144,402	70,935	290,071	4.9623
Deutsch-Luxemburgische Bergwerks- und Hütten-A.-G.....	89,849	29,135	69,667	188,651	3.2273
Luxemburger Bergwerks- u. Saarbrücker Eisenhütten-A.-G.....	12,667	69,668	163,403	245,738	4.2039
Röhlingsche Eisen- und Stahlwerke, G. m. b. H.....	46,868	62,954	133,381	243,203	4.1606
Gebrüder Stumm, Gesellschaft mit beschränkter Haftung.....	31,160	78,534	107,669	217,363	3.7185
Les Petits Fils de Fols de Wendel & Cie.....	82,206	66,629	165,808	314,643	5.3827
Rombacher Hüttenwerke.....	275,453	60,472	95,634	431,559	7.3828
Actien-Gesellschaft der Dillinger Hüttenwerke.....	72,201	42,561	.....	114,762	1.9633
Eisenhütten-Actien-Verein Düdelingen.....	130,668	46,967	46,966	224,601	3.8423
Lothringer Hüttenverein Aumetz-Friede.....	162,008	34,200	69,668	281,710	4.8193
Addition.....					
Rümelinger u. St. Ingberter Hochöfen u. Stahlwerke A.-G.....	.....	33,587	17,099	50,686	0.8668
Eisenwerk-Gesellschaft Maximilianshütte.....	13,017	63,668	51,594	128,279	2.1945
Actien-Gesellschaft Peiner Walzwerk.....	19,001	6,333	183,669	209,003	3.5755
Bochumer Verein für Bergbau und Gubstahlfabrikation.....	46,689	59,453	942	107,084	1.8319
Gesellschaft für Stahl-Industrie mit beschränkter Haftung.....	21,103	60,642	2,319	84,064	1.4381
Georgs Marien-Bergwerks- und Hütten-Verein, A.-G.....	378	77,522	.....	77,900	1.3327
Fried. Krupp Aktiengesellschaft.....	164,854	197,018	40,208	402,080	6.8785
Ver. Stahlwerke van der Zypen u. Wissener Eisenhütten-A.-G....	7,238	1,447	19,302	27,987	0.4788
Phoenix, Aktien-Gesellschaft für Bergbau und Hüttenbetrieb....	63,335	146,934	.....	210,269	3.5971
Sächsische Gubstahlfabrik.....	.....	30,401	.....	30,401	0.5201
Ver. Königs- u. Laurahütte, A.-G. f. Bergbau- u. Hüttenbetrieb..	.....	.....	.....	.....	.....
Oberschlesische Eisenbahn-Bedarfs-Actien-Gesellschaft.....	.....	.....	.....	.....	.....
Huldschinsky'sche Hüttenwerke.....	.....	.....	.....	.....	.....
Kattowitzer A.-G. für Bergbau und Eisenhüttenbetrieb.....	.....	.....	.....	.....	.....
Oberschlesische Eisen-Industrie, Actien-Gesellschaft für Bergbau und Hüttenbetrieb.....	.....	135,414	122,747	258,161	4.4165
Eisen- und Stahlwerk Bethlen-Falva, Actiengesellschaft.....	.....	.....	.....	.....	.....
Bismarckhütte.....	.....	.....	.....	.....	.....
A. Borsig, Berg- und Hütten-Verwaltung.....	.....	.....	.....	.....	.....
A. Schoenawa.....	.....	.....	.....	.....	.....
Total weight, raw steel basis.....	1,888,131	2,087,891	1,869,423	5,845,445	100.0000

witz, Bethlen-Falva, Borsigwerk, and A. Schoenawa. Prior to their accession the other Silesian works, the Oberschlesische E. B. A. G., Huldschinsky and Kattowitz had been the only members.

A second line of finished iron and steel is that designated as "B Products." These include steel bars, wire rods, plates and sheets, merchant pipe and railroad axles, wheels, forgings, &c. These products are sold by the members of the Verband on their own account at prices determined by themselves, but the members are not allowed to exceed their allotment. In this group a considerable number of increases in the allotment were granted. In bars an increase of 5 per cent. on April 17, 1905; 5 per cent. on February 1, 1906, and 1.5 per cent. on April 24, 1906. In wire rods, 10 per cent. on January 25, 1906, and 5.5 per cent. on April 23. In plates and sheets, 5 per cent. on April 17, 1905; 5 per cent. on November 15, 1905; 5 per cent. on February 1, 1906; 4.5 per cent. on April 23, 1906, and 10 per cent. on July 1, 1906. In tubes, 5 per cent. on May 29, 1905; 5 per cent. on November 15, 1905; 4.5 per cent. on April 23, 1906, and 5 per cent. on July 1, 1906. On railroad axles, wheels, &c., 5 per cent. on June 29, 1905; 5 per cent. on November 15, 1905; 10 per cent. on April 1, 1906, and 10 per cent. on July 1, 1906.

The allotment of the works on the total production of the Verband is shown in the accompanying tables.

It will be observed that Thyssen & Co. head the list,

ceeded by the Verband, the shipments of billets to domestic markets (finished weight), have been as follows:

	Metric tons.
March 1, 1902, to 1903.....	737,621
March 1, 1903, to 1904.....	844,629
March 1, 1904, to 1905.....	1,042,688
March 1, 1905, to 1906.....	1,293,480

The report adds: "The measures taken by the Verband to reduce export sales as much as possible in the interests of the domestic consumer will become still plainer in the second and third quarters of this year."

The total shipments of billets from April 1, 1905, to March 31, 1906, amounted to 1,996,779 metric tons (figured on the raw steel basis) and therefore exceeded that of the previous year, when it was 1,643,368 tons, by 353,411 tons, and exceeded the allotment of 1,641,289 tons by 355,411 tons. Of the total shipments 72.61 per cent. was for home requirements and 27.39 per cent. for export.

In the formation of the Verband the allotment is based on the crude steel. A commission has determined how much crude steel is necessary to produce different articles. Thus it is assumed that 1000 metric tons of raw steel is required for 875 tons of sheet bars, 840 tons of rails of 15 kilos per meter and upward and 805 tons of beams, channels, &c., below 20 kilos per meter. The figures relating to shipments are all expressed in the equivalent of raw steel.

The total shipments of rails and track material amounted to 1,735,344 metric tons, as compared with 1,419,948 tons during the preceding year. Since the allotment was 1,798,005 tons the shipments fell 3.49 per cent. below it. Of the total shipments 66.73 per cent. went to domestic markets and 33.27 per cent. for export.

In shapes the shipments amounted to 1,739,915 metric tons (raw steel basis), against 1,518,765 tons during the preceding year. They exceeded the allotment of 1,574,727 tons by 10.48 per cent. Domestic markets took 73.27 per cent. and export 26.73 per cent.

The report states that in spite of this favorable state of affairs, and, although costs at the works advanced steadily, the Verband adhered to the home prices established for years for the entire fiscal year, and it was only on January 1, 1906, that there was an increase of 5 marks per ton on shapes, followed by a like advance on billets, effective April 1, 1906. These advances, it is claimed, did not cover the rise in cost during the time elapsed.

Steadily rising prices were secured for export. Still, the average yield was a little less per ton of shipments

During the past 12 months the shipments have been as follows:

	Billets. Metric tons.	Rails. Metric tons.	Shapes. Metric tons.
1905.			
July	146,124	120,792	147,271
August	170,035	121,134	142,998
September	170,815	133,868	146,079
October	177,186	156,772	132,996
November	173,060	145,758	119,641
December	169,946	155,538	151,951
1906.			
January	175,962	154,859	129,012
February	156,512	155,671	125,376
March	178,052	172,698	177,107
April	153,891	147,000	163,668
May	158,947	179,190	184,434
June	156,869	148,167	176,457
July	145,658	149,931	189,975

No data are given concerning the shipments of the "B Products."

The George A. Hogg Iron & Steel Foundry Company, Pittsburgh, Pa., builder of rolls and rolling mill machin-

Allotments of the German Steel Companies, August 1, 1906.—Continued.

Companies.	"B" products.					Total products "A" and "B."				
	Bars, &c. Metric tons.	Wire rods. Metric tons.	Plates and sheets. Metric tons.	Tubes, axles, &c. Metric tons.	Railroad Metric tons.	Total "B" products. Metric tons.	Per cent.	Own steel. Metric tons.	steel. Metric tons.	Total. Metric tons.
Aachen	122,459	19,264	.....	.....	1,977	143,700	3.1924	414,644	.....	414,644
Hoesch	123,431	23,210	50,120	.....	7,367	204,128	4.5348	396,324	.....	396,324
Thyssen & Co.	305,942	33,154	129,432	52,139	3,529	524,196	11.6452	885,200	.....	885,200
Gutehoffnungshütte	89,662	39,457	106,344	.....	30,749	266,212	5.9140	522,424	.....	522,424
Haspe	49,140	40,618	.....	.....	.....	89,758	1.9940	121,557	.....	121,557
Hölder	66,642	.....	137,062	.....	22,501	226,205	5.0252	542,875	.....	542,875
Rheinische Stahl- werke	80,454	.....	65,325	.....	16,206	161,985	3.5986	431,660	8,750	440,410
Union	109,049	.....	.....	.....	19,766	128,815	2.8617	406,500	12,386	418,886
Deutsch-Luxemburg- ische	36,349	46,420	.....	.....	.....	82,769	1.8387	271,420	.....	271,420
Luxemburger u. Saar- brücker	101,489	17,408	.....	.....	.....	118,897	2.6413	364,635	.....	364,635
Röchling	90,511	29,896	.....	.....	308	120,775	2.6831	363,978	.....	363,978
Gebrüder Stumm	114,623	30,173	.....	.....	792	145,588	3.2343	362,951	.....	362,951
Wendel & Cie.	155,819	27,852	77,179	.....	1,351	262,201	5.8249	576,844	.....	576,844
Rombach	45,802	.....	.....	.....	245	46,047	1.0230	477,606	.....	477,606
Der Dillingen .....	.....	.....	107,055 } 15,005 }	.....	10,436	132,496	2.9435	247,258	.....	247,258
Düdelingen	24,233	.....	.....	.....	.....	24,233	0.5383	248,834	.....	248,834
Aumetz-Friede	36,349	.....	.....	.....	.....	36,349	0.8075	318,059	.....	318,059
Rümelinger u. St. Ingberter	45,559	25,531	.....	.....	491	71,581	1.5902	115,979	6,268	122,247
Maximilianshütte ..	49,541	.....	14,517	.....	.....	64,058	1.4231	192,337	.....	192,337
Peiner Walzwerk	105,785	.....	.....	.....	257	106,042	2.3558	315,045	.....	315,045
Bochumer Verein. Gesellschaft für Stahl-Industrie ..	22,975	.....	.....	.....	81,207	104,182	2.3144	295,330	.....	295,330
Georgs-Marie	2,423	.....	.....	.....	16,235	18,658	0.4145	96,558	.....	96,558
Fried. Krupp	151,234	8,007	66,632	1,701	176,194	403,768	8.9699	805,848	.....	805,848
Van der Zypen u. Wissen	33,926	.....	.....	.....	23,081	57,007	1.2664	84,994	.....	84,994
Phoenix	145,241	162,470	97,248	.....	28,943	433,902	9.6393	500,153	144,018	644,171
Sächsische Gubstahl- fabrik	22,416	.....	.....	.....	7,039	29,475	0.6548	59,876	.....	59,876
Ver. Königs- u. Laurahütte .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oberschlesische E.-B.-A.-G. ....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hulschinsky .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kattowitz	209,444	.....	114,607	35,716	36,303	498,350	11.0711	756,511	.....	756,511
Oberschlesische Eisen-Industrie Bethlen-Falva .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bismarckshütte. A. Borsig .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
A. Schoenawa .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals, raw steel basis	2,340,558	503,460	980,526	89,556	484,997	4,501,377	100.0000	10,175,400	171,422	10,346,822
										100.0000

during the second fiscal year than during the first, because during the second year 30.5 per cent. of the quantities marketed by the Verband were exported.

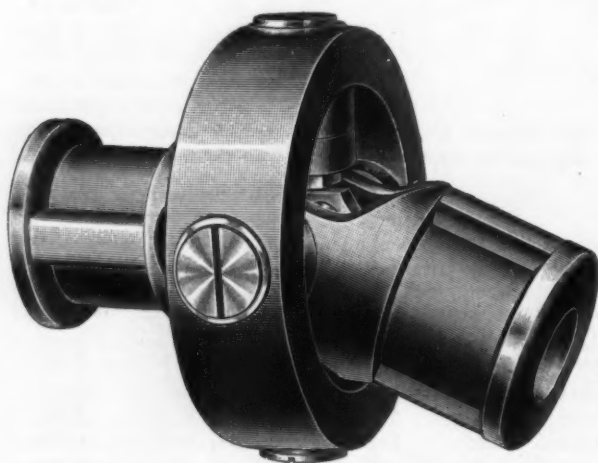
During the first fiscal year the percentage exported was only 19.8 per cent., the balance of the tonnage exported, with its lower yield, having been done by the works themselves. We presume that these were old export contracts taken by the individual companies before the organization of the Verband. The report adds that another point must be considered. Through the increase in the total shipments the participation of those works is increased who are entitled to a special settlement in the Verband, so that the sums on their account taken from the yield of the domestic market shipments grew. The report claims credit for having held back in the matter of raising prices for the home market, and has therefore been true to its frequently proclaimed purpose to look out for steady work at a moderate profit and to preserve German industry from sharp shocks.

ery, has been awarded a contract for a rolling mill to re-roll rails from 40 lb. down to 12 lb., to be built for A. L. Greenberg, Terre Haute, Ind. The company has also closed contracts recently for several large shears, two roll lathes, two complete roll trains, an engine and squeezer, besides smaller machines. The works are now being operated double turn. The chilled roll department will be enlarged to care for the increased business in that line. The superintendent, W. H. Melaney, has introduced an entirely new mixture for chilled rolls, which produces a roll capable of standing more heat without detriment to the roll.

The United States Treasury is again enjoying a surplus. The deficit which has prevailed since the beginning of the present fiscal year was wiped out September 17, when a surplus was shown of \$1,256,599. At the corresponding time last year the Treasury was burdened with a deficit of \$14,459,127.

The Gray & Prior Universal Joint.

The Gray & Prior Machine Company, Hartford, Conn., is putting on the market a new universal joint, known as Style B, which is designed for use wherever the torsional load is great and where space is limited, as on automobiles, in connection with marine engines, &c. The shank ends of the joint, which is shown in the illustration, are of steel; the swivel studs are of steel, case hardened, and the transmission ring or central member is of a special bronze. This ring is hollow to minimize the weight of the joint, and at the same time it provides a large reservoir for holding a quantity of oil, about



The Style B Universal Joint Made by the Gray & Prior Machine Company, Hartford, Conn.

$\frac{1}{2}$ pint, which insures positive lubrication. The ring is so tight that the oil cannot be thrown out by centrifugal force when the joint is rotating. The working angle is purposely limited to 30 degrees from a straight line. Six sizes of the joint are regularly manufactured, the bore of the shank ends ranging from 1 to $3\frac{1}{4}$ in. The shaft parts are secured to the joint by inserting their ends into the bored ends of the joint, and the parts are fastened together by taper pins, keys or set screws.

Progress in San Francisco's Reconstruction.

SAN FRANCISCO, CAL., September 8, 1906.—The insurance money paid to policy holders amounts up to date to about \$80,000,000 and probably by the end of the year nearly all that it is possible to get from the insurance companies will have been handed over. Out of what has already been paid and which has gone into the banks, a large amount, estimated at some \$60,000,000, has been loaned in the East to help the speculation on Wall Street. If it did not find some such employment this money would have to lie idle until the building of some of our great business blocks had been resumed.

Up to the present most of the building done has been confined to the construction of temporary offices and warehouses, some of them very large, but of course nothing like those they have replaced. A great deal of time will still be required to clear the ruined blocks of debris. When that is done building can be resumed. Preparations for it are being made in good shape. The permits issued in the month of August were in excess of \$6,660,000, while contracts for new buildings recorded have of late reached as much as \$1,000,000 in a single week, and most of these are now for buildings of a permanent character—structural steel and reinforced cement, brick, &c.

The construction of buildings for homes for the people goes very slowly, but as the population is coming back by degrees the work cannot be long delayed. Flats and dwellings that before the fire commanded \$20 to \$25 per month are now rented for \$35 to \$50; but these are prices that the people cannot pay and those who put up flats will have to be content with old figures. When building is started in earnest it will take no end of lumber and hardware of all descriptions.

After the debris is cleared away the old business sec-

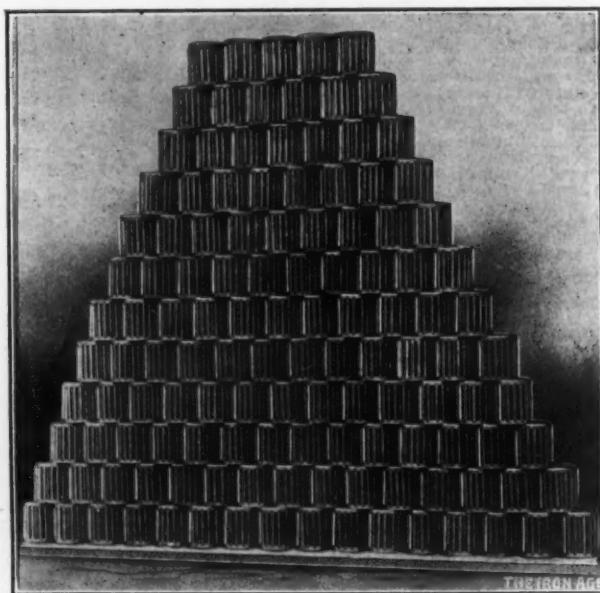
tion of the city east of Grant avenue will begin to rise from its ashes. The contracts for clearing some of these lots run as high as \$13,000. There are here some fine tall buildings of structural steel and brick that received little or no injury from the fire and none from the earthquake, that are now approaching completion. By degrees the neighborhood is beginning to present more of the appearance of a modern city. Some of the buildings that were deemed to be perfectly safe were found not to be so, and it will take \$700,000 to put the Merchants' Exchange in proper condition.

We have been getting some iron and steel by sea from Antwerp, but on the whole very little. By rail, however, large quantities of steel have been ordered, although as yet they have been coming to hand somewhat slowly. While some will be obtained from Belgium and Germany, all will be ordered from the East that can be had that way. It will take well toward the close of the year to clear away the lots, and active operations requiring the use of large quantities of iron and steel will not as a rule begin before that date.

J. O. L.

One Day's Work in Roller Bearings.

The illustration shows one day's work in one department of the shop of the Bantam Anti-Friction Company, Bantam, Conn., maker of ball and roller bearings of all types. An idea of the size of the bearings may be obtained from the fact that they are intended for railway car trucks with journals $3\frac{1}{2}$ in. in diameter by 5 in. long. There are 126 shown in the illustration. Roller bearings such as these find ultimate service upon cars, principally in Cuba and South America and also in some of our Southern States, for plantation and industrial railways. The firm is at present filling an order for about 3000 cars of double truck type. The principal factors in the success of roller bearings are a properly designed box and truck and the best material and workmanship in the bearings. As yet roller bearings have not been found satisfactory



A Day's Output from One Department of the Bantam Anti-Friction Company, Bantam, Conn.

on large steam railroads or transcontinental lines, principally owing to the small space permitted by the pedestal jaws of the Fox pressed steel truck, which seems to be growing in favor and prohibits the use of roller bearings or ball bearings of any type. The greatest usefulness for roller bearings in car truck work is therefore that for narrow gauge cars or cars of special construction.

The Fulton Iron Works, San Francisco, Cal., announces that its works were not destroyed by fire on August 31 as reported. The fire only reached a portion of the foundry, which was put in operation again in about four days and the balance of the works remained in full operation.

New Equipment for Iron Mines.

Important Plans of the Steel Corporation.

DULUTH, MINN., September 15, 1906.—The Duluth, Missabe & Northern road will close September with a total of about 8,000,000 tons of shipments for the season, which will be 1,500,000 tons for this month. October will be somewhat less and November will show a further shrinkage. The expected 11,000,000 tons for the year will scarcely be reached. Both the Steel Corporation roads have closed orders for a major portion of the new equipment required for the coming season. The Duluth & Iron Range has given the Pressed Steel Car Company an order for 400 50-ton steel hopper bottom air brake ore cars. The Duluth, Missabe & Northern has given the same company an order for 600 cars and the Standard Steel Car Company an order for 200, all of the same general design. Motive power orders will shortly be placed. In this connection proper Steel Corporation committees will take up in a few days the matter of appropriations for their Minnesota railroads and their mine equipment, and go over the entire matter of expenditure on capital account in the Lake Superior region for the coming year. Very large orders for surface and underground equipment, especially for the Mesaba range and at new mines here, will probably be authorized. Including railroad equipment, these orders will amount to several million dollars. The Duluth, Missabe & Northern road will not add to its ore shipping dock capacity, but the Duluth & Iron Range will pull down No. 5 dock and rebuild it larger and higher from the water's edge. This will probably cost \$400,000. New dock construction for the winter will include this and one pier for the Chicago & Northwestern road, which is to rebuild one of its older piers.

A New Vermillion Range Option.

The Biwabik Mining Company has taken an option for a lease on Pine Island, in Vermillion Lake, about 5 miles north of the mines of the Minnesota Iron Company. Pine Island contains a slaty hematite formation that has a fine appearance on casual inspection, though how this may be borne out by underground developments no one has yet learned. The Biwabik Company will find out, for drills are to be placed upon the land at once. This lease will call for a 25-cent royalty. The precise location of the work will be on the south one-half of the southwest one-fourth of section 32-63-15 and on all of section 5-62-15 aside from lot 6.

The Oliver Iron Mining Company is sinking a very large foot wall shaft on the old Wisconsin or New Davis property, Gogebic range. This was bought from the Wisconsin Company, owner of the lease, which latter is from the Keweenaw Association, owner of so many properties on that range. The new shaft is to be of four compartments, similar to that of the Norrie, steel lined and very substantial, and will be one of the deepest ever sunk on the Gogebic range. It is designed not so much for the Davis ore body, which is probably small, as for tapping the extension of the Bonnie ore bodies on bottom dykes, over in section 13-47-47, where the Oliver Company by drill work some time ago learned of the presence of large ore measures. This company has no deep permanent shaft on its section 13, or its Geneva or Royal, which adjoin along the strike of the formation easterly. This shaft is designed to serve them all.

The Pittsburgh Iron Ore Company.

Hon. A. Maitland of Negaunee is managing the mines connected with the Cherry Valley Iron Company and associated interests. These companies hold five mines on the Mesaba range, three of them in operation and two now under development. Shipments this year will amount to about 400,000 tons. They would have been considerably larger but for the difficulty over cars, which all mines shipping over the Great Northern road have felt to an unusual and unexpected degree. There were also disconcerting discoveries of taconite where ore was confidently looked for, especially in the LaRue and Croxton mines. Neither of these mines, which are the largest shippers of the group, will be able to produce as much as was expected on account of rock appearing where ore had been supposed to exist. This group consists of the Croxton, situated in the southwest one-

fourth of the southwest one-fourth of section 13-58-20; the Brunt, in the east one-half of the northwest one-fourth of section 10-58-18; the Hobart, in the southeast one-fourth of the northwest one-fourth of section 25-58-17; the Nassau, in the northwest one-fourth of the northeast one-fourth, and the northeast one-fourth of the northwest one-fourth of section 5-57-20; and the LaRue, in the north one-half of the northwest one-fourth of section 22-57-22. Croxton, Brunt and Nassau are the property of the newly organized Pittsburgh Iron Ore Company, of which Joshua Rhodes is president, though his company did not hold all the stock in any of them, nor the majority in any but Croxton. LaRue and Hobart are held by separate organizations. Brunt is a very new mine. The trees were only cut down on its location in March and April this year, but since then a shaft has been sunk and 30,000 tons have been shipped. If cars are available there will be a shipment this year of about 75,000 tons. It is underground at present, but General Manager Maitland has recommended that it be stripped, there being but 60 ft. of surface. This is a deposit of considerable size and importance, though it would have been considered low grade a few years ago and was so looked upon when the present owners got it. Nassau is a deep deposit, though with little surface. The shaft is going down in rock close to ore which is known to be more than 300 ft. deep in places. It will be a shipper in another year. LaRue will not ship over 150,000 tons this year, though more had been expected. It cut rock in places where ore was looked for and it has been impossible to get men to carry on stripping operations that are necessary. These will be done the coming winter season and the mine will be in shape for a good production then. The pit opened by Captain Sellwood, while he owned the mine, will be mined out this fall. Croxton has shown some rock shelving into the ore, cutting it off and shoving it on the adjoining land, thus reducing available tonnage by a small amount. It will mine this year about 160,000 tons. Hobart is a new mine and will produce a small tonnage of excellent ore this year. A very large pumping equipment is being placed. Much development will be necessary on all this group for another year and shipments then will be largely increased over the expectations for 1906.

A Disappointing Mesaba Property.

An interesting situation has arisen in connection with the Holland mine, in the northeast one-fourth of the southeast one-fourth of section 4-58-10, which is owned and operated by an independent ore selling firm. The mine will produce about 150,000 tons this season, its second, and will probably be worked out as the result. When explored it looked as though the property contained at least 500,000 tons, and competent mining engineers estimated about double that. In point of tonnage it has been one of the most disappointing properties ever opened on the Mesaba range. The exploration showed an ore body elliptical in shape, from 35 to 80 ft. thick, and with its horizontal diameters 200 and 600 ft. Explorers in early days of the Mesaba sank a shaft about 200 ft. away in ore and rock, and ran drifts in ore southeast and west to within 50 or 60 ft. of the Holland drill holes. All these drill holes were in low ground, a sort of sink hole that the company took advantage of in its work, and it has now been found that the southerly holes were within 7 ft. of a vertical wall of rock inclosing the ore, while some of the northerly holes were within 6 ft. of the wall. It is the custom among explorers and estimators on the Mesaba range to figure outside of all holes in estimating ore, the distance varying with the size of the body developed, but usually running about 100 ft. In such an ore body as was shown at the Holland no such large factor as 100 would have been taken, but certainly 30 ft. would have been considered conservative, and if this error had been continued completely around the ellipse the tonnage would have varied greatly from the facts as they have been now ascertained. A year ago the Holland was under negotiation for sale to one of the largest steel making miners, and on a price of \$250,000, and the difference of but a few thousand dollars prevented the sale. All of which goes to show that explorations cannot be too thorough and careful.

D. E. W.

THE IRON AGE

1855-1906.

New York, Thursday, September 20, 1906.

DAVID WILLIAMS COMPANY,	PUBLISHER
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RICHARD R. WILLIAMS,	-	-	-	-	-	-	HARDWARE EDITOR

The Lake Superior Ore Situation.

Prominence has been given to the fact that the merchant iron ore interests centered at Cleveland have been urged by furnace companies to make contracts to deliver ore in a 12-months period whose beginning is eight months ahead. If the ore companies had consented, as they did not, the responsibility for the price fixed in such contracts would have been in large part with the furnacemen. And that again would have been a departure in ore market history. That the price named for 1907 ores would have been in line with the conditions that made consumers willing to make such extraordinarily early contracts was to be expected. Though assured that a gradual increase in working forces at the mines is to be looked for after harvest time, furnace companies in a number of cases have had such difficulties in getting ores to make up their shortages that they want to make doubly sure for next year. They seek to contract with producers whose properties are not only well developed, but located in mining centers with houses sufficient to accommodate comfortably adequate working forces. The hardships of life in some of the newer mining towns, or those in which operations have been suddenly expanded after having been on a small scale for years, give the best labor supply to the older and better organized companies.

The shortages on this year's ore contracts, of which so much has been heard, have been most marked on the Gogebic range. Two Gogebic mines have been conspicuous in the list, notice having been given that only 50 per cent. of the ore sold could be delivered. The conditions appear to have been exceptional at these mines. Both had been looking better in the past two years, and it seemed possible early in the year to get out a much increased output, but the effort to double the working force has been steadily defeated. In the majority of cases sellers short on their contracts have furnished full data to their customers as to the disposition of the ores mined. A complete list of original sales is given, and a statement of shipments on each, as well as of all ore shipped in the year and its destination, so that no room is left for the suspicion that ore has gone on the market to new buyers at the higher prices prevailing in recent months.

Instead of making sales for next year the merchant ore firms of Cleveland are entering the tentative requisitions of their customers for 1907 in the order of receipt. No options on these various tonnages have been given, but in most cases consumers have been told that they would be taken care of, though just how any positive assurance can be given that there will not be a duplication next year of the shortage of 1906 it is hard to see. The point is, apparently, that the ore firms do not mean to give any preference to early comers and that, if there is any deficiency in 1907, shipments will be prorated. Where it has been necessary in the past two months to buy ore to piece out, from 25 to 50 cents advance over season prices has been paid for non-Bessemer and from

50 to 75 cents advance for Bessemer ores. Yet there is no claim that these figures are a criterion for 1907, and for reasons already discussed in these columns the advance asked is likely to be conservative. In non-Bessemer ores not only is the factor of vastly greater supply, as compared with the Bessemer reserves, an important influence, but also the sharper competition of Southern furnaces, which Northern makers of foundry iron must meet when conditions change.

Yet there is no question of the broad underlying influence toward sustained strength in the Lake Superior ore market contributed by the contract between the Hill interests and the United States Steel Corporation, as well as by the recent experiences of ore consumers seeking to acquire mines. While technically it may be premature to speak of the pending agreement as a "contract," it has long been such in effect. That the understanding has been thorough on essential points is well indicated by the refusal of the Hill interests to entertain proposals for certain portions of their holdings, made on behalf of independent steel companies or important merchant ore firms. To all such overtures the reply has been that nothing of the sort could be considered in view of the understanding already arrived at with the United States Steel Corporation.

Revising Corporation Laws.

The Tennessee Legislature proposes to enact a stricter corporation law, the principal reason being that the present Tennessee statutes contain no provision requiring the amount of capital paid in to be set forth in the charter. This is a movement in the proper direction. Nearly every State permits too much laxity on the part of organizers of corporations. While many States require the amount of paid-in capital to be stipulated, they permit various items to be capitalized as the equivalent of cash when in reality they may have no value whatever in the future conduct of the business, as, for instance, the item of "services rendered" in establishing the company. There are a few exceptions to this general rule, but there is, we believe, no State which so governs the establishment of its corporations and their existence afterward that the purchaser of stock in such companies and those doing business with them can look to the amount of capital stock published and to the annual reports made to the State with any assurance that the statements of condition represent actual facts.

Public opinion strongly favors the need of a general revision of the corporation laws of the country, and the possibility is imminent that it may become desirable for the National Government to take a hand in the matter and establish a general corporation law which shall supersede those of the States. The need for this seems to become greater steadily; it is peculiarly noticeable in flush times such as these, when fictitious values are the more readily credited. A great many corporations have been organized which have no substantial reason for their being and whose promoters have sold stock secured by absolutely nothing but doubtful or worthless patent rights, or real estate of unknown and oftentimes vastly over-rated value, or some other exaggerated asset. Stockholders and sellers of machinery and supplies have found that they have been deceived and sometimes actually swindled, and the State that permitted the organization of such corporations, surrounding them with no safeguards, but instead giving them a sort of Government indorsement of honesty, has been considered as being party to the deception.

Some States exercise full jurisdiction over public service corporations, not only establishing the amount of new stock which can be issued, based upon the actual money expended or to be expended, but going still farther and setting the price at which the stock may be sold, which is generally well above par. Of course the latter supervision would be going too far in governing the ordinary industrial or commercial corporation, but it would not be too much to require that before a State issues a charter the cash or its equivalent shall be paid in, with severe penalties for false reports. Patents should by no means be reckoned as part of the paid-in capital. Patent rights may have an actual value, or they may not. In the beginning of many corporations a patent right then held as an asset is, strictly speaking, a speculative asset, which time alone can prove valuable, or the reverse.

The existing corporation laws have served some good purposes; without them perhaps the great combinations necessary to carry through important undertakings would never have been formed. But be that as it may, the business interests of the country desire corporation laws which shall mean what they used to mean in some States, when to say that a company had been incorporated with \$100,000 capital stock meant that its credit could be established upon that amount as a basis of assets, and when corporation returns were watched with some assurance that unless perjury or trickery were committed the statement covered approximately the financial condition of the company. In exchange for the privileges and exemptions which a State gives with its charter, incorporators should be willing to conform to rigid laws governing their business association.

The Import Movement in Manganese Metals.

Figures were presented in these columns some months ago showing that the continued scarcity of manganese metals was to be attributed to a great increase in the demand, rather than to any decrease in the supply. Since then additional statistics of imports have become available which give further confirmation to this point. We have obtained from the Bureau of Statistics at Washington the details of imports for consumption of ferromanganese and of spiegeleisen during the first two quarters of this year. The figures for the four quarters of the fiscal year ending June 30, 1906, are given below, with an approximation to the equivalent of ferromanganese imported, obtained by dividing the tonnage of spiegeleisen by four to put it in terms of ferromanganese. Totals for previous fiscal years are also appended:

<i>Imports of Ferromanganese and Spiegeleisen—Gross Tons.</i>		
	Ferromanganese.	Total in terms of Ferromanganese.
Third quarter, 1905...	13,313	4,836
Fourth quarter, 1905...	12,910	12,924
First quarter, 1906...	14,622	27,255
Second quarter, 1906...	21,220	26,579
Fiscal year, 1906.....	62,065	71,594
" " 1905.....	41,166	22,443
" " 1904.....	23,903	50,620
" " 1903.....	53,121	122,566
" " 1902.....	37,613	31,416
" " 1901.....	8,995	16,308
" " 1900.....	10,684	13,615

There has been a progressive increase in each quarter of the past fiscal year in the imports of manganese, the equivalent ferromanganese imports in the last quarter of the fiscal year being almost double those of the first quarter of the fiscal year. The total for the fiscal year is larger than in any previous fiscal year, barring 1903, and the imports of ferromanganese and of spiegeleisen

separately are also larger. The increase in metallic manganese imported in these two forms from 1905 to 1906 is 70 per cent. Imports of manganese ore and oxide of manganese have been as follows:

Fiscal years.	Gross tons.
1901	134,211
1902	208,568
1903	175,845
1904	105,927
1905	225,174
1906	225,962

Imports of the ore in the past two fiscal years have been much larger than in previous years, but it is purely an accident that imports appear to have been steady through the fiscal years 1905 and 1906. The calendar years showed an increase from 108,519 tons in 1904 to 257,033 tons in 1905. There were very light imports in the fore part of 1904 and very heavy imports in the fore part of 1905. The record by half years has been as follows:

	Gross tons.
First half, 1904.....	24,467
Second half, 1904.....	84,052
First half, 1905.....	141,122
Second half, 1905.....	115,911
First half, 1906.....	110,051
July, 1906	17,165

This record shows quite clearly the cause of the scarcity of manganese metals which has existed for about a year. The demand for steel increased suddenly about the close of 1904, and with it the demand for manganese metals. Imports of manganese ores responded promptly, the imports in the first half of 1905 being much more than double those in the whole calendar year of 1904, and may be supposed to represent something like the normal demand, in relation to a large demand for steel. Since then the imports, while large compared with previous years, have been short of the increased demand.

Unsettled conditions are likely to prevail in the manganese trade for some time, since with the troubles in Russia and the difficulties in exploiting some more recently opened deposits in other parts of the world the supply is irregular. Were it merely a question of reaching the same total as formerly there might be little difficulty, but the figures cited show that the problem is to augment largely the world's supply. The ore movement into the United States and other smelting countries has been extremely irregular. In June of this year, for instance, the imports of manganese ore into this country were 41,592 gross tons, a handsome rate, being equal to 250,000 tons for a half year, whereas the record half year, the first half of 1905, showed only 141,000 tons. July of this year, however, showed only 17,165 tons, a very poor rate indeed.

The supply of domestic manganese ores is too small to be worth bringing into comparison with the import figures cited, only 4118 tons of strictly manganese ore having been produced in the United States in 1905, according to the Geological Survey. While a much larger tonnage of manganiferous iron ore was produced, the manganese content was relatively small with the great bulk of the tonnage. The Colorado supply, however, was of some moment, being 45,857 tons, of which the survey estimates the average manganese content at 19.5 per cent. No estimate is made of the average content of the ores produced elsewhere.

The United Engineering & Foundry Company, Pittsburgh, will shortly ship to the Illinois Steel Company, South Chicago, a motor driven reversing universal mill. This mill was designed by K. C. Gardner, contracting engineer of the United Engineering & Foundry Company, and is the first mill of its kind to be built.

CORRESPONDENCE.

The Stahlwerks-Verband on Judge Gary's Testimony Before the Committee on Merchant Marine and Fisheries.

To the Editor: As is shown in the report of *The Iron Age* of April 19, 1906, Chairman E. H. Gary of the United States Steel Corporation has made partially erroneous statements before the House Committee on the Merchant Marine and Fisheries on April 11, bearing on home and export prices of the German steel industry and on the general industrial conditions in Germany. Mr. Gary has stated as a fact that the home prices of the makers of other steel producing countries are generally higher than the home prices of the manufacturers in the United States. This is not correct so far as Germany is concerned; the German domestic prices are, on the contrary, considerably lower than the American.

For the month of March, 1906, the American prices were per gross ton:

Billets	\$27.00 to \$33.00
Rails	28.00
Bars	33.60 to 41.78
Sheets	44.80 to 58.24

Calculated in dollars, the domestic prices in Germany for the same month of March, 1906, were considerably lower, as follows:

Billets	\$22.98
Rails	27.09
Bars	\$28.82 to 29.50
Sheets	30.24 to 32.76

The statement was furthermore made with reference to Germany that its steel industry enjoys more extensive and better tariff protection than that of the United States. That, too, is not correct. The following comparison shows, on the contrary, that the American rates are all higher than the German rates:

Rates of Duty Per Gross Ton.

	United States.	Germany.
Steel ingots, blooms, billets and steel bars valued at 1 to 1½ cent per pound.....	\$6.72 to \$13.44	\$3.63
Steel rails.....	7.84	6.29
Iron bars, rounds, hoops and bands.....	11.20 to 17.92	6.29
Plates and boiler plates.....	11.20 to 24.64	\$7.26 to 10.89

Mr. Gary's statement before the committee with reference to the spread in Germany between domestic and export prices for rails and shapes is also inaccurate. According to the chairman of the Steel Corporation, the relation between the domestic and foreign prices is \$30 to \$24 for rails, and \$33.60 to \$28 for beams. As a matter of fact, in March, 1906, the German domestic price for rails was \$27.09, and the export price \$25.40 to \$26.61; for shapes the German domestic price was \$26.61, and the export price was \$25.50.

A protest must also be entered against Mr. Gary's assertion that in Germany they do not pay more than one-half the American wages. Besides their outlays for private workmen's welfare work, the German manufacturers must bear as an addition to the wages public and social charges of about 100 to 150 marks per man, so that the German workman is protected against the dangers of old age, sickness, invaliding and accident, and thus has an important pecuniary advantage over the American workman. Quite irrespective of this, the German wages are higher than estimated by Mr. Gary. On the contrary, German wages in the iron and steel industry are at least two-thirds of the American wages. The fact must be considered, too, that the German manufacturers try to hold their men in bad times, while the American manufacturers dismiss their men when there is scarcity of work.

All that Mr. Gary states concerning the commercial policy of the German Government and the alleged payment of export bounties by it is entirely wrong. The German Government does not pay any export bounties to the iron industry. There can be no question whatever of an "artificial stimulation" of the industry by the State in Germany.

STAHLWERKS-VERBAND AKTIENGESellschaft.
DÜSSELDORF, GERMANY, August 22, 1906.

A Substitute for Colored Spectacles.

To the Editor: Everybody is familiar with the use of smoked and colored eyeglasses for looking at the sun and at other sight trying things. Most of us have used these when we wanted to get a peep into an open hearth furnace or to see the fireworks of a Bessemer converter at short range. They are all good as eye protectors, though they necessarily have an effect upon color values that may or may not detract from their full benefit. It all depends upon the purposes for which they are employed. Yet it happens that the extra pair of eyeglasses is a positive nuisance, only endured by those whose business absolutely requires them. Did ever a man take kindly to carrying the spectacles he seldom uses? Not he. He borrows a pair and is thankful at the expense of the other fellow.

There is a little expedient that comes in handy and is useful in a pinch, especially when borrowing spectacles may be unwise or for any reason objectionable. I have used it many times, and have been under the impression that it is well known. But recently at a lecture I sat alongside a professor of deserved eminence. He is a man from whom I have gained information of value, and to be in a position to tell him something he could use in his work was a pleasure. Experiments in an instructive branch of metallurgy were under way, and the professor at my elbow shielded his eyes from the glare of the glowing metals. Holding up a pamphlet, he would peer around its edges in a guarded, not to say shrinking, way. Men with smoked or colored glasses were then in great demand. I took the pamphlet from my friend, and with the point of my penknife made a tiny hole through the stout cardboard cover. He could then look through that small opening and closely and continuously follow the molten metal in its changing phases.

Any one familiar with the use of the diaphragm of a camera lens will readily understand how the light is modified, and will appreciate the differences due to the use of the various sizes of openings. I rather fancy that the idea may not be so well known as I supposed it was, and therefore it deserves the greater publicity that can be given by these columns. A trial of the scheme is simplicity itself. A post card or a scrap of paper and a pin are all the essentials. The reader can try the plan right now on the sun. Or if he reads at night and makes the test an incandescent lamp he will note the peculiar manner in which the apparently heat fattened filament thins out under this pin hole inspection.

R. I. C.

The Cleaning of Blast Furnace Gas.

To the Editor: In *The Iron Age* of September 6, page 603, F. E. Junge states in an article on the cleaning of blast furnace gas that at Isabella Furnaces 400 lb. of coal per ton of pig iron are required to be burned under the boilers to furnish steam, and that this is an offset to the 400 lb. of coke gained by dry blast. Kindly permit me to state that when investigating the dry blast at Isabella Furnaces, part of which investigation I described in my "Notes on the Gayley Dry Air Blast Process," read before the American Institute of Mining Engineers at its Bethlehem meeting in February, 1906, I made among other observations the following:

Boiler Capacity.—They have 8 Cahill and 12 Babcock & Wilcox boilers, each rated at 250-hp., or 5000-hp. for all 20 boilers. They use about 9 tons of coal per day all boilers, or about one-half ton per boiler per day. Their horsepower requirements, according to careful experiments, for the six engines are:

H.-P. per day.
5400 hp. to run six furnace engines.
550 hp. to run furnace pumps.
250 hp. to run electric plant.
100 hp. to run shops.
50 hp. to run compressor.
6350 hp. required for furnace operation.
5000 hp. rated capacity.

1350 hp. overload.
When the dry blast was put on one furnace it was found that the three dry blast engines required 2109 hp., instead of 2700 hp. as shown above for three engines, making a gain of 600 hp. from the use of dry blast through the lower revolutions and pressure.

The refrigeration plant, however, required, according to the

same report, 331 hp., so that the total gain to the boilers was 600 — 331 = 269 hp., which accounts for the fact that, in spite of the additions of the ammonia compressing plant and a possible diminution of calorific power of the dry air gas, there was ample steam from the existing boiler plant under the same conditions of overload.

This was not incorporated in my notes on dry blast, as these notes only covered a portion of the investigations made at the time, but the above plainly shows that there is some error in the calculations made by Mr. Junge as to the cost of coal that should be charged for furnishing power for dry blast. As a matter of fact, it is clearly shown that there is a decided gain in power and consequently in cost. There is no question, however, that cleaning the gases, whether from furnaces using dry blast or normal air, is a very great advantage and a matter that deserves careful study. C. A. MEISSNER.

NEW YORK, September 17, 1906.

The Detroit River Tunnel Tubes.

Mention has been made in these columns of the contract for the construction of the Detroit River double tube tunnel of the Michigan Central Railroad, which has been awarded by the Detroit River Tunnel Company to Butler Brothers-Hoff Company of New York City. The contract calls for the completion of the tunnel by June 1, 1909, and the design involves a new departure in subaqueous tunneling methods.

A trench method is to be employed. In accordance with this plan, before sections of the steel tunnel tubes are floated into place, and immediately after the dredging for the section has been completed, piles are to be driven in the bottom of the dredged channel and cut off at the proper height (or an inch or so below to permit shimming). These piles are to be capped with steel beams to receive the tubes. When the piles are driven, the bottom of the channel to the level of the top of the beams is to be filled with a layer of material of suitable consistency and bearing power, for 12 to 18 in. in thickness or as much more as may be necessary to fill in holes or depressions left in the bottom of the trench by the dredging operations. This layer will form a blanket between the bottom of the trench and the concrete to be deposited around the steel tubes. For this layer sand and gravel will be used, with the addition of cement where necessary.

In the trench and upon the steel beams and bed of gravel and concrete will be sunk tubes of plate steel $\frac{3}{8}$ in. thick and weighing an average of 15.3 lb. per square foot. The steel tubes will be built in lengths of 263 ft., or in such lengths as are found most convenient to handle. The plates will be lap jointed with a double row of $\frac{3}{4}$ -in. diameter rivets, the outside edges being beveled and calked so as to be absolutely watertight. The steel tubes are to be reinforced on the outside about every 12 ft. by diaphragms which will serve the purpose of a cradle in sinking the tubes to their permanent position. On the inside, midway between the diaphragms, the tubes are to be reinforced with a stiffened angle to which will be attached, temporarily, radial rods of 1-in. diameter, though these rods may be dispensed with if it shall be found that they are not needed. The ends of the tubes are to be reinforced with similar radial rods to prevent deformation during handling. The steel in the tubes is to be of the grade of "railroad bridge steel," with an ultimate tensile strength of 55,000 to 65,000 lb. per square inch.

The accurate measuring of the rate of flow of rivers is a difficult problem, since the water travels faster at the surface than near the bottom, and in the middle than near the banks, and no single measurement will satisfactorily estimate the velocity as a whole. An interesting chemical method recently devised is said to produce results correct within 1 per cent. It involves adding a certain quantity of brine to the stream, after which, at a point farther down, samples are taken and subjected to careful analysis. The increase in salinity gives a factor which enables the calculation of stream discharge.

The American Locomotive Company.

The fifth annual report of the American Locomotive Company, issued last week, covers the operations of the corporation for the fiscal year ended June 30 last. It is a very fine showing, as is indicated by increases of \$18,397,675.34 in the gross earnings, \$2,108,838.09 in net earnings and \$1,939,212.25 in surplus. The net credit to the surplus shows an increase of \$508,704.55. The statement includes, it should be said, the operations of the Rogers and Montreal plants, which partly accounts for the great increase in the gross earnings for the year. The income account compares as follows:

	*1905-6.	1904-5.
Gross earnings	\$42,547,876.40	\$24,150,201.06
Manufacturing, maintenance and administrative expenses	36,085,370.74	19,796,533.49
Net earnings	6,462,505.66	4,353,667.57
Interest, &c., on securities of constituent companies, bills payable, &c.	281,812.10	112,186.35
Profit	6,180,693.47	4,241,481.22
Dividend on preferred stock	1,750,000.00	1,750,000.00
Surplus	4,430,693.47	2,491,481.22
Expended during the year for additions and betterment of plants	1,001,564.66	†1,883,556.96
	3,429,128.81	607,924.26
Extraordinary improvements and betterment fund	2,000,000.00	
Balance to profit and loss	1,429,128.81	607,924.26
Dividend on common stock	312,500.00	
Net credit to surplus	1,116,628.81	607,924.26

* Includes operations of Rogers and Montreal plants.
† Investment in Montreal plant.

President W. H. Marshall explains that for convenience the financial statement given above includes the results of operations of all properties controlled by the company, whereas the reports for previous years have shown only the results of operations of the eight original plants. The report proceeds:

"The gross earnings include the revenue from the manufacture and sale of steam and electric locomotives and from extra boilers, tanks, cylinders and other locomotive parts; also, in increased volume, the manufacture and sale of steam shovels, dredging machinery, trucks for electric service, rotary snowplows, &c., the overhauling and general repair of a large number of old locomotives and sundry items of income from investment and other sources.

"The expenses include, as usual, all direct and indirect charges against manufacturing, maintenance and administration. They also include the customary depreciation charge of 20 per cent. of the book value of patterns, drawings and templets, iron flasks, formers and dies, together with such adjustment as was necessary in the book values of the material and stock on hand after the latter had been subjected to careful inventory. In addition to the disbursements for maintenance which have been included in expenses there has been spent for improvements and additional property the balance of \$401,796 remaining in the fund of \$1,000,000 created for this purpose on June 30, 1904, and \$1,001,564 out of the operating profit of the year.

"Owing to necessary changes in the company's plans, the separate shovel shop which it was proposed to erect at Dunkirk is being constructed at Richmond instead.

"The results of the company's efforts in the development of trucks for electric service have been highly satisfactory.

"One of the important developments during the past year has been the organization of a subsidiary company, known as the American Locomotive Automobile Company, for the purpose of manufacturing automobiles and motor vehicles. An excellent factory has been constructed at Providence, R. I., and is now under full operation.

"During the year the lien against the Rhode Island Works, consisting of \$125,000 first mortgage bonds issued February 1, 1899, by the International Air Power Company, was satisfied by the payment of the principal sum; and the collateral deposited by the vendors of that plant at the time of its acquisition was returned to them. The Rhode Island plant is therefore free of all incumbrance."

The La Belle Iron Works.

The annual meeting of stockholders of the La Belle Iron Works, Steubenville, Ohio, was held in Wheeling, W. Va., last week, the company being incorporated under the West Virginia laws. Directors were elected as follows: A. J. Clarke, A. S. List, N. E. Whitaker, H. C. Franzheim, J. J. Holloway and W. H. Hearne, Wheeling; A. H. Woodward, Birmingham, Ala.; George Greer, New Castle, Pa., and Isaac M. Scott, W. D. Crawford and D. J. Sinclair, Steubenville. J. J. Holloway and W. H. Hearne are new members of the board, succeeding E. W. Mudge of Pittsburgh and W. L. Foltz of New Castle. The report of the company for the fiscal year ending June 30, 1906, was submitted as follows:

INCOME ACCOUNT.

Net earnings from operations...		\$1,969,132.09
Less:		
Expenditure on reconstruction and renewal of plants.....	\$49,303.95	
Amount written off mine leases and development expenditure	20,935.36	
Taxes chargeable against the operations of the period prior to June 30, 1905.....	34,343.98	
Provision for exhaustion of minerals	11,468.94	116,052.23
Net profits		\$1,853,079.86
Deduct:		
Interest on first mortgage 6% bonds	\$150,000.00	
Dividends on capital stock....	516,450.00	666,450.00
Surplus for the year.....		\$1,186,629.86
Surplus as at June 30, 1905....		1,291,829.16
Total		\$2,478,459.02
Less special depreciation		250,000.00
Balance		\$2,228,459.02

CONSOLIDATED BALANCE SHEET.

Assets.		
Real estate, plant, &c., at Steubenville and Wheeling.....	\$7,844,179.87	
Coal lands, &c.....	417,067.78	
Mining leases	178,680.56	
Machinery and equipment at mines, including cost of opening mines at Steubenville and in Fayette County.....	727,535.11	
Patterns and patents	20,651.32	
Total capital assets.....		\$9,188,114.64
Deferred charges to operations:		
Development on leased mines, advance royalties, insurance unexpired, &c., chargeable against future operations...		97,975.05
Inventories of manufactured products, materials and supplies, &c., on hand at cost..	1,613,622.96	
Accounts receivable (after deducting reserve for bad and doubtful debts and discounts)	1,686,826.53	
Bills receivable	37,911.03	
Cash	317,508.69	
Total current assets.....		3,655,869.21
Total		\$12,941,958.90
Liabilities.		
Capital stock	\$7,000,000.00	
Less in treasury	114,000.00	\$6,886,000.00
First mortgage 6% bonds.....		2,500,000.00
Total capital liabilities...		\$9,386,000.00
Funds:		
For depreciation	250,000.00	
For exhaustion of minerals...	38,657.93	
For relining and rebuilding furnaces, etc.....	104,121.04	392,778.97
Accounts payable	728,399.29	
Taxes accrued	48,136.62	
Interest accrued on bonds.....	20,465.00	
Dividend (No. 60).....	137,720.00	
Total current liabilities..		934,720.91
Surplus June 30, 1906....		2,228,459.02
Total		\$12,941,958.90

The stockholders recommended to the directors that a stock dividend of 8 per cent. be declared, and the directors will act upon this recommendation at a later date. The La Belle Iron Works has been paying a quarterly

dividend of 2 per cent. on its preferred stock for some time. A number of important improvements and additions to the plant were discussed, and it was practically decided to erect three jobbing mills and eight sheet mills. Contracts for these new mills will likely be placed within a short time. There is also under advisement the building of three more open hearth furnaces and installing the direct metal process. These latter improvements, however, will probably not be made for a year or more, as ground is not yet available.

In regard to the reported pending consolidation of the La Belle Iron Works and Wheeling Steel & Iron Company, it can be stated that this matter was brought up in an informal way some time ago by some of the stockholders of the Wheeling Steel & Iron Company, and the matter has progressed so far that a number of directors of that company have appointed a committee to confer with a similar committee of the La Belle Iron Works with a view to consolidating. The La Belle Iron Works will probably appoint a similar committee in the near future, but whether the consolidation will be effected cannot be stated at this time. It is understood, however, that the majority of the directors of the La Belle Iron Works are opposed to the consolidation.

British Pig Iron Production in 1906.

The output of pig iron in Great Britain for the first half of 1906, as shown by returns to the British Iron Trade Association, was 4,905,424 tons. This compares with 4,621,600 tons in the first half of 1905, an increase of 283,824 tons. In the first half of 1904 the output was 4,048,965 tons. The production of different descriptions of pig iron in the first six months of 1905 and 1906 is shown in the following table:

	1905.	1906.
	Gross tons.	Gross tons.
Forge and foundry.....	1,968,445	2,148,273
Hematite	1,999,290	2,009,276
Basic	567,476	630,660
Spiegelferro, &c.....	86,389	117,215
Total	4,621,600	4,905,424

The British Iron Trade Association computes the average number of furnaces in blast in the first half of 1906 at 363 1-3, and the average number out of blast at 151 2-3 furnaces. The average output per furnace in the half year ending June 30, 1906, was 13,501 tons, or at the rate of 27,002 tons for 12 months, which compares with an average of 27,724 tons per furnace in blast in the year 1905. The *London Iron and Coal Trades Review* says that while the output of pig iron in Great Britain in the first half of this year is 856,459 tons more than in the first six months of 1904, exports of iron and steel for the first half of 1906 only increased 472,378 tons over the corresponding period of 1904. "The inference is justified that the greater part of the increased iron output has gone, and is going, into domestic consumption, which is either a highly satisfactory or a doubtfully satisfactory condition of things, according to the aspect from which it is regarded. Moreover, we have imported in the first half of the current year 61,000 tons more of iron and steel than we did in the first half of 1904, and if this be taken into account, our increase of home consumption becomes still more manifest."

To decide between turbine or reciprocating pumps for a given service a good rule is to assume that where the head, expressed in feet, is greatly in excess of the quantity to be delivered in gallons per minute, a reciprocating pump will give the better results. For example, a turbine pump designed to deliver 500 gal. per minute, against a head of 500 ft., will have a probable efficiency of about 72 per cent., while the best possible efficiency from one designed to deliver 50 gal. per minute, against a head of 500 ft., would be only about 60 per cent. And not only would the efficiency be lower, but it is probable that the initial cost of the turbine pump would be greater than that of the best type of three-throw reciprocating pump designed for the same service.

OBITUARY.

JOHN E. FRY.

John E. Fry died suddenly at Johnstown, Pa., August 30, aged 69 years. He had been an invalid for a number of years, afflicted with valvular disease of the heart. He was born at Norristown, Pa., and went to Johnstown as a young man, where he learned the iron molders' trade with his brother-in-law, Thomas Magee. After serving in the army during the Civil War he became superintendent of the Cambria Iron Company's foundry and continued in that capacity until the completion of the Bessemer steel plant. This was the sixth Bessemer plant to be built in the United States. It made its first blow July 10, 1871, under the superintendency of Capt. Robert W. Hunt. Mr. Fry had meanwhile been a close student of this branch of the company's business, and when Captain Hunt resigned in September, 1873, to take charge of the Albany & Rensselaer Iron & Steel Company's works at Troy, N. Y., Mr. Fry succeeded him and developed brilliant qualities as a steel works manager. He increased the daily output of Bessemer steel far beyond what had been estimated as the capacity of converters of the size then in use. So great was his success that the management of the Cambria Iron Company recognized the achievements accomplished under his direction by a public order of commendation.

Mr. Fry afterward turned his attention to open hearth steel practice and for a time managed the Pernot open hearth furnaces of the Springfield Iron Company at Springfield, Ill., where he overcame difficult problems and succeeded in making the plant operate satisfactorily. Subsequently for a number of years he had charge of the converting department of the Wheeling Steel & Iron Company, Wheeling, W. Va., where he contributed greatly toward the adaptation of the Bessemer process to the production of low carbon steel for general purposes. In the manipulation of the converter he was an adept and his advice was sought by owners of various steel works when results were not satisfactory. In this capacity he for a time operated the Clapp-Griffiths plant of Atkins Brothers, at Pottsville, Pa.

While Mr. Fry, unlike others of his prominence in the steel trade, contributed no papers to engineering or metallurgical societies, he was able to express his views with remarkable perspicuity and at various times the columns of *The Iron Age* have been graced with contributions from his trenchant pen in the discussion of the phenomena of steel conversion. He was a member of that famous coterie of Bessemer steel pioneers contributed by the Cambria Steel Works, which consisted of George Fritz, Capt. William R. Jones, Capt. Robert W. Hunt, Charles Kennedy, Alexander Hamilton and D. N. Jones, whose names are indelibly written in the history of the achievements of the American steel trade.

GEORGE B. LESSIG, chairman and manager of the Ellis & Lessig Steel & Iron Company, Pottstown, Pa., died suddenly from heart disease on September 10, while fishing on a stream in that vicinity. He was 63 years of age. Beginning life as a bricklayer about 25 years ago, he entered the iron manufacturing business by purchasing the Hope mill of the Pottstown Iron Company. Subsequently he became a member of the firm of Ellis & Lessig, one of the most successful iron manufacturing concerns in the Schuylkill Valley, of which he was the principal organizer. It is singular that William S. Ellis, a member of this firm, fell dead about 12 years ago while on a fishing trip, and Mr. Lessig's brother, Joshua B., also a member of the same firm, expired suddenly in the yard of his home. Mr. Lessig was president of the Citizens' National Bank and of the Pottstown Water Company and was identified in an official capacity with a number of other corporations.

DANIEL O'DAY, one of the leading men in the Standard Oil Company, died at Rouen, France, September 13, aged 62 years. He was abroad for his health. He was born in Ireland, came to the United States when very young, and was educated in the public schools of Buffalo.

In 1865, when barely of age, he went to the Pennsylvania oil regions and became connected with the oil transportation business. From 1873 to 1876 he built pipe lines and about that time became identified with the Standard. He gradually consolidated all Pennsylvania pipe line interests into the United Pipe Line System. In later times this passed under the control of the National Transit Company, of which he was president at the time of his death, and his son, Daniel O'Day, Jr., vice-president. He was connected, among others, with the following companies: Buffalo General Electric Company, as president and director, and the Buffalo Natural Gas Company, as president and director. He was also a director in the Buffalo, Thousand Islands & Portland Railroad, Cataract Power Conduit Company, Federal Trust Company of Newark, International Railway Company, International Steam Pump Company, New York Transit Company, Niagara Falls Power Company, Oil City Boiler Works, the People's Bank, the Buffalo Seaboard National Bank, Venango Traction & Power Company and Northwestern Ohio Natural Gas Company.

JOSEPH M. BASSETT, Worcester, Mass., a prominent manufacturer of woolen machinery, died in Paris September 12, aged 72 years. He was born in Eden, Vt., in 1834. His business connections were successively with E. C. Cleveland & Co., Bassett & Hobbs and Cleveland & Bassett, until in 1870 the firm of Johnson & Bassett was founded, which Mr. Bassett conducted for many years as sole owner. Some years ago he took his son, George M. Bassett, into the partnership, and much of the cares of the business has since rested upon the younger man. He leaves a widow and two sons, George M. Bassett and Arthur J. Bassett.

GEORGE W. ROBERTSON, president of the Southard, Robertson Company, stove manufacturer, died at Peekskill, N. Y., September 17, after a long illness from paralysis. He was born October 19, 1838, in New York City and was educated at the Peekskill Military Academy and the Charlottesville University. He served in the Civil War as a member of the Seventy-first Regiment of New York. He had been a member of the New York Legislature, filling one term in the Assembly and another in the Senate. He leaves two daughters and one son.

JAMES STEWART, who in 1865 founded the firm of James Stewart & Co., dealers in scrap iron, steel and metals, Boston, Mass., died September 11, aged 78 years. He was a native of Scotland, but had come to this country when 19 years old. He learned the machinist's trade and during the Civil War worked for the South Boston Iron Company, making guns. He leaves a son, Frederick J. Stewart.

B. FRED TRITCH, secretary of the George Tritch Hardware Company, Denver, Colo., died September 6.

The British Iron Trade.—British iron market reports at the close of the first week in September showed that pig iron producers were well supplied with orders and were generally in a better position than at any time in five or six years. Cleveland warrants fluctuated between 54s. 4½d. and 54s. 7d. in the first week of the month, an advance of about 6s. over the corresponding week of 1905. The shipments of pig iron from the Cleveland District in the first eight months of the year were 970,610 tons, exceeding all records, and comparing with 638,010 tons in the first eight months of 1905. Germany took 303,972 tons of this year's total. No recent business with the United States is reported. Finished iron and steel lines give rather more favorable reports, rail manufacturers particularly, there being large rail contracts ahead. Heavy sections range from £6 7s. 6d. to £6 10s.

The annual meeting of the stockholders of the Thomas Iron Company was held September 11 at Hokendauqua, Pa. The reports submitted by the officers showed a very prosperous year. The full Board of Directors was re-elected and the officers were also re-elected, as follows: B. F. Fackenthal, Jr., president and general manager; William H. Hulick, vice-president; James W. Weaver, secretary and treasurer.

PERSONAL.

G. Mil Horton, who has for six years been connected with the American Tool Works Company, Cincinnati, as purchasing agent, has resigned that position to become general manager October 1 of the combined Cincinnati Screw & Tap Company and Victor Stamping Company, at Epworth Heights, Ohio.

A. M. Crane, formerly general sales agent of the Illinois Steel Company and for some time past Pittsburgh manager for the Ohio Iron & Metal Company, has been appointed general sales agent of the New York State Steel Company, Buffalo, N. Y., effective October 1.

Chairman E. H. Gary of the United States Steel Corporation arrived in New York September 13 from a two months' sojourn in Europe.

E. Windsor Richards, who among British iron masters is one of the best known in the United States, recently resigned the chairmanship of Bolckow, Vaughan & Co. and has entirely severed his connection with that company. He was general manager from 1876 to 1888, then a director and for four years has been chairman.

B. F. Jones, president of the Jones & Laughlin Steel Company, Pittsburgh, has returned from a two months' visit to Europe. Mr. Jones took an automobile trip through Italy and France.

William K. Herwig, formerly superintendent of the Boston Iron & Steel Works of the National Tube Company at McKeesport, has been made superintendent of the Republic Iron Works of the National Tube Company at Pittsburgh.

D. Z. Norton, of Oglebay, Norton & Co., Cleveland, is in Europe.

William P. Snyder, Pittsburgh, is a member of the commission of six having in charge the dedication of the new capital of Pennsylvania at Harrisburg October 4.

Thomas James, who recently retired as master mechanic of the Edgar Thomson Works of the Carnegie Steel Company after a connection of 34 years, was presented with a chest of 210 silver pieces by the employees of the works.

J. D. Rogers, for the past four years assistant superintendent of the blast furnace of the Salem Iron Company, Leetonia, Ohio, has been made superintendent of the blast furnaces of the Ashland Coal & Iron Mining Company, Ashland, Ky.

Smoke Prevention.

A scheme for fuel economy and smokeless combustion for steam power plants, designated as the Hydro Carbon System, is installed by the Hydro Carbon Furnace Company, 1012 Chemical Building, St. Louis, Mo. The principal feature of the system is the introducing into the furnace, in a proper manner, of a certain amount of hydrogen gas, with the exact amount of oxygen required, which, holding in check the carbon and gases generated from the fuel, gives a thorough intermixture. This combination, it is claimed, produces instantaneous and perfect combustion. A steady mechanical induced draft is provided, regardless of atmospheric conditions or the height of chimney, which is described as positive, instantaneous and yet flexible in its action. The equipment is simple in construction and repairs are easily and quickly made. To insure utilizing all the gases from the fuel, instead of allowing part to escape up the chimney unconsumed, is another object of the system. Incidentally the steaming of boilers is advanced to their maximum capacity and efficiency and sudden demands for steam are promptly met. Another possibility is the successful burning of low grades of fuel, and the combustion being perfect, less ashes are left. Other desirable results are the abatement of smoke, soot and cinder nuisances, and fouling of the tubes is diminished. There is claimed to be no accumulation of unconsumed substance on the shells of the boilers, in the flues, or on the tubes. The system is reported to have been successfully applied to high pressure boilers of all types, horizontal, tubular,

water tube and upright, and also marine and locomotive. Many electric light and power plants have already been equipped and many large plants in various lines of manufacture.

A German Coal and Ore Handling Plant.

Germany has a coal and ore handling equipment of an entirely new sort, recently erected at the Walsun wharves of the Gutehoffnungshütte on the Rhine. Storage areas of 4 and 3 acres are provided for coal and ore, respectively, and in all there is some 6 miles of tracking. The novelty of the system is that instead of dumping the entire cars the bodies are made detachable and these alone are dumped. Each car frame carries four 8-ton hinged boxes or skips weighing, empty, 2 tons each. These skips are loaded at the colliery, and on arriving at the wharf are lifted bodily by the crane, swung and lowered into the ship's hold, automatically discharged and returned to the car frame. This work is done by 10-ton electric jib cranes having a reach of 40 ft., which are mounted on wharves in front of transporter bridges. Each crane can load 180 to 220 tons an hour, and at high water the capacity rises to 300 tons per hour. Similar cranes, travelling on the electric transporter bridges, handle the coal to the storage piles. Each bridge has a span of 100 yd. and runs on tracks 250 yd. long.

To ship the coal from the stockyard it is lifted by automatic 6-ton grabs attached to the traveling cranes on the bridges, and similar grabs can also be attached to the cranes on the ground. The great advantages of this system are increased capacity, avoiding damage to the coal in discharging the skips, and the possibility of working at high or low water. A smaller wharf frontage and a shorter length of rail track are sufficient than with other systems, and only two men are needed to operate each crane instead of the six required for the ordinary tippie. The first cost of the installation is somewhat high, but additional cranes can be put in at about half the cost of tipples. Polyphase current at 10,000 volts is generated at the Sterkrade colliery and transformed at the wharf to 500 volts.

The Warwick Company Leases Another Furnace.

—For some time the Warwick Iron & Steel Company, Pottstown, Pa., has been in negotiation with the Glasgow Iron Company and the Pottstown Iron Company relative to leasing a blast furnace at Pottstown, controlled by the Glasgow Company under its lease with the Pottstown Company. The terms of the lease have now been agreed upon, the Warwick Company has taken possession of the furnace and the term of the lease is 14 years. The plant will be modernized and considerable new equipment will be added so as to increase the capacity. In about three months the furnace will be put in operation and will produce the same quality of foundry pig iron as that made in the furnace now operated by the Warwick Company. The stack will be designated as Furnace No. 3, and will increase the daily product of the Warwick Company to 800 tons. Several other parties had been trying to secure the furnace, but the Warwick Company was the natural lessee, being in position to use its organization and facilities already established, and having large orders in hand and under negotiation, which can be promptly filled by the aid of the additional furnace.

The Société Westinghouse Electrique de Russie has acquired from the Westinghouse interests all of their patents for Russia relating to electric apparatus, turbines, gas engines, &c. The company has acquired from the Compagnie Centrale d'Electricité the electric works at Moscow. The Board of Directors is composed of George Westinghouse, president; E. Dejardin-Verkinder, vice-president of the Société Generale of Paris, and J. H. Lukach, managing director of the Traction & Power Securities Company, Limited, vice-presidents, and the Marquis de Frondeville, vice-president of the Banque de l'Union Parisienne, T. Lombardo, managing director of the Banque de Nord of St. Petersburg, and W. E. Smith, general manager of the Westinghouse Brake Company of Russia.

NEWS OF THE WORKS.

Iron and Steel.

The Empire Iron & Steel Company, Niles, Ohio, is making extensive improvements to plant for the purpose of increasing the output of pure wrought iron galvanized and black sheets and all forms of pure wrought iron and roofing and siding products.

The stack of the St. Louis Blast Furnace Company, St. Louis, Mo., which has been blown out for repairs, will probably be idle from four to six weeks. The furnace will be relined at the bosh and the ore and coke bins will be elevated.

General Machinery.

The Freeman Mfg. Company, Kalkaska, Mich., manufacturer of iron and wood working machinery and dealer in new and second-hand machinery, is making extensive improvements to its plant. The machinery additions include a new 400-hp. Corliss engine, shafting, pulleys, hangers, belting, exhausters, dust collectors and automatic sprinkler apparatus. Nearly all of the equipment has been contracted for.

Henry W. Berry, who recently acquired the plant of the Owensboro Forging Company, Owensboro, Ky., will start it up as soon as he can get a competent foreman, which he expects will be about October 1.

The Clyde Iron Works, Duluth, Minn., has purchased a whole block in the west end of the city on which it will erect one of the largest foundries and machine shops in the Northwest. It is not the intention to commence building operations until next spring.

The Etna Heating Company, New Britain, Conn., is fitting up a new machine shop for the manufacture of steam specialties used in connection with the Etna Unit heating system.

The bankruptcy affairs of Aultman, Miller & Co., Akron, Ohio, who failed three years ago, have been wound up in the local courts. The total liabilities of the firm, which manufactured reapers and other machinery, amounted to \$1,834,428.73, while the total assets received by the trustees amounted to \$625,833.14. The amount paid to creditors in dividends was \$353,419.61, representing a fraction over 22 per cent. of the claims. In addition mortgages, taxes and preferred claims to the amount of \$230,395.18 were paid, while the remainder of the assets, \$41,946.35, was paid out as fees, operating and other expenses.

Power Plant Equipment.

The Allis-Chalmers Company, Milwaukee, has been awarded the contract for a new pumping engine by the city of Nashville for furnishing additional water supply. It will have a nominal capacity of 20,000,000 gal. daily against a head of approximately 300 ft., with steam at a pressure of 160 lb. per sq. in. The stroke will be 72 in., and the engine will run 20 rev. per min. It will weigh 950 tons.

The Board of Water Commissioners, Cohoes, N. Y., will receive bids until October 1 for one 4,000,000-gal. triplex water power driven pump.

Henry Phipps, formerly of the Carnegie Steel Company, has decided to erect another large power building on Duquesne way, Pittsburgh. The structure will be 14 stories high and will be of brick, steel and concrete construction. The contract for the structure has been let to the Pittsburgh Building Company, New York. The building will front 110 ft. on Duquesne way, and will be 120 ft. deep. It will be constructed for light manufacturing purposes, similar to several other buildings owned by Mr. Phipps in that section. Mr. Phipps already owns a large power building near Duquesne way, which was fully illustrated and described in *The Iron Age* of September 15, 1904.

The firm of W. E. Messenger & Co. has been organized at Pittsburgh to act as contracting engineers, will open offices in the Conestoga Building in that city October 1, and will act as agents for manufacturers in the sale of specialties for steam, gas and water work. Among concerns whose products the new firm will handle are the following: Hays Mfg. Company, brass goods, Erie, Pa.; Continental Rubber Works, mechanical rubber goods, Erie, Pa.; Oswego Tool Company, pipe cutting and boiler makers' tools, Oswego, N. Y.; W. L. Brobaker Bros., taps and dies, Millersburg, Pa.; National Gauge Company, railway pressure gauges; Clement Restein Company, packings, Philadelphia, and the Best Mfg. Company, piping construction department, Pittsburgh.

The Jacobson Motor Company, with a capital stock of \$100,000, has been incorporated at Jamestown, N. Y., and will build a plant there for the manufacture of gas engines. The new company will be under the management of Charles Jacobson, formerly of Warren, Pa., inventor and manufacturer of gas engines.

Foundries.

The Kenton Hardware Mfg. Company, Kenton, Ohio, contemplates making some improvements the latter part of this year or the early part of next, which will include the erection of a one-story brick foundry building, 60 x 198 ft. with trusses

for roof of iron and of sufficient strength to carry a trolley system transmitting loads of at least 1000 lb. The company will require a 66-in. cupola and a belt or rope driven elevator in addition to the transmission system.

The West Steel & Iron Castings Company, Cleveland, Ohio, recently incorporated with a capital stock of \$30,000, has broken ground for the erection of its plant at East Seventieth street and the Lake Shore & Michigan Southern Railroad. The plant, which will be ready for operation by December 1, will produce high-grade steel castings by the converter process, ranging from one to five tons. Ralph H. West is president and treasurer; Frederick Baird, vice-president, and David P. Lansdowne, secretary.

The Phoenix Foundry Company, Chicago, sustained slight damage by fire September 7, the buildings used for storage and the powerhouse being burned. The foundry itself was only slightly touched, and the company expects to resume operations in the near future.

The Worcester Steel Foundry Company, Worcester and Millbury, Mass., manufacturer of crucible steel castings, suffered a fire, September 13, a portion of the new building and the roof of the older structure being destroyed. The loss was not nearly so great, however, as was reported in the daily press. No furnaces were destroyed, and all are now in operation, and no patterns were burned. The machine shop and office escaped entirely. On the whole the fire caused hardly perceptible break in manufacturing. The company is rushed with orders.

The Day Foundry Company, recently incorporated at Buffalo, N. Y., to manufacture brass, aluminum and bronze castings, has secured the old plant of the Kellogg Iron Works at Illinois and Mary streets, and has fitted it up for foundry purposes.

The Hercules Float Company, Springfield, Mass., manufacturer of copper floats and air chambers, is to build an addition to its plant, 35 x 80 ft. and one story, to accommodate a brass foundry and give additional room for copper work and the manufacture of floats and chambers. Foundry equipment is all that will be required.

Bridges and Buildings.

The Security Bridge Company, Minneapolis, Minn., has the contract for a 600-ft. bridge across the Yellowstone River, in Yellowstone County, Montana. The contract price is \$34,680.

The Kellogg Iron Works, Buffalo, N. Y., architectural iron and steel fabricator, has completed and moved into its new plant at the junction of the Buffalo, Rochester & Pittsburgh and Buffalo Southern railroads.

Fires.

The white lead works of Harrison & Brothers, Philadelphia, Pa., were badly damaged by fire September 13.

The Electric Light & Water Works power house at Covington, Ind., was damaged by fire September 13, the loss being about \$20,000.

The Pioneer Iron Works, Brooklyn, N. Y., were destroyed by fire September 16.

The varnish plant of Pratt & Lambert, Long Island City, N. Y., was destroyed by fire last week.

The plant of the Richard Henzmann Iron Works, Louisville, Ky., was damaged \$3000 by fire September 14.

The plant of the Lanyon Zinc Company, Iola, Kan., was burned a few days ago. The loss is placed at \$50,000.

Hardware.

The Susquehanna Hardware Mfg. Company, Buffalo, N. Y., recently incorporated with a capital stock of \$1,000,000, has contracted for the erection of its factory at Susquehanna, Pa., where it will manufacture light and medium lines of hardware.

Final arrangements have been made for the removal of the Bradford Union Mfg. Company from Bradford, Pa., to Dunkirk, N. Y., where the company has been reorganized under the name of the Russell Mfg. Company. A three-story factory building has been purchased in Dunkirk and will be fitted up for the manufacture of the company's specialties, which include a combination level, plumb and inclinometer, as well as a line of barometers and thermometers.

The Reliable Tool & Specialty Company, Louisiana, Mo., has been incorporated with a capital stock of \$12,000. It will manufacture edge tools, cutlery and similar lines. The officers of the company are: F. W. Buffum, president; Peter Neerup, vice-president, and B. S. Garrick, secretary and treasurer.

The National Dairy Machine Company, manufacturer of cream separators, Newark, N. J., has removed its plant to Goshen, Ind. The company is now located in larger quarters than were afforded in the Newark plant. The factory, while fully equipped for present needs, will receive additional machinery from time to time as demand develops.

The Metal Stamping Company, Jackson, Mich., which has been operating a plant at Jackson for the past two years in the manufacture of White Frost refrigerators, is building a new and modern plant at Michigan Center, a suburb of Jackson. The plant will consist of a main building, 64 x 626 ft.; oil house, 64 x 64 ft.; galvanizing plant, 44 x 50 ft.; power house, 44 x

62 ft.; a benzine and enamel storage and a warehouse, 100 x 200 ft. All the buildings, with the exception of the warehouse, will be one story. The latter building will be five stories. The plant will be used exclusively in refrigerator manufacture. The main building and power house will be completed and ready for occupancy on December 1, but construction will not begin on the other buildings until next spring. With the exception of a few presses and dies all equipment has been provided for. The Commonwealth Power Company, Jackson, will furnish the motors, dynamos and other electrical equipment. The main office of the company will be maintained at Jackson, the new plant being utilized only for manufacturing purposes.

The International Fiber Company, 35 Congress street, Boston, is to erect a large plant at South Boston for the manufacture of all classes of vegetable fibers, such as Manila hemp and jute. A large tract of land at City Point has been purchased, with a long water frontage. Eight buildings will be erected at a cost of \$600,000, all of reinforced concrete, and all of three or six stories. The main building will be 150 x 500 ft., with three wings, each 100 x 537 ft. The two outer wings will contain the rope, twine, spinning and cable rooms. The power house will be 85 x 165 ft. Very large warehouses will be included in the plant.

The Norton Company, Worcester, Mass., manufacturer of grinding wheels, will erect a brick addition to its works, 80 x 94 ft. and four stories. The building will be used as a crushing mill. The large increase in the company's wheel business and the demand for alundum has made it necessary to increase facilities for crushing and grading alundum, and this is the purpose of the new building.

Philip Slabodien of New York has purchased the entire business of the Standard Emery & Polishing Wheel Company, Springfield, Mass. He states that it is his intention to largely increase the business, with the accompanying advantages of improved facilities.

The Jacobs Mfg. Company, Hartford, Conn., manufacturer of the Jacobs Improved Drill Chuck, has been forced to move into a larger and more convenient factory in that city, owing to the increased demands upon its manufacturing facilities. Additional machinery is being installed, and the hope is expressed that in the near future the company will be able to promptly take care of its rapidly increasing business.

Miscellaneous.

The Telephone Toll Meter Company, St. Johnsbury, Vt., has been organized under the laws of Vermont, with capital stock of \$25,000. It is understood that the company will manufacture a patent toll meter, the invention of I. H. Hall, Jr., of St. Johnsbury, but the officers state that details of their plans are not yet perfected.

The American Car & Foundry Company is re-equipping its plant at Depew, N. Y.—a manufacturing suburb of Buffalo—and expects to have it in readiness for operation in about 30 days for making repairs to freight cars, for which it has large contracts with the New York Central and other roads. Later on the plant is to be employed in the manufacture of new cars.

The Midland Steel Company has awarded the contract for three ice breaking piers for its harbor at Midland, Pa., to the Pennsylvania Contracting Company, Pittsburgh. The piers will be of concrete and stone construction.

The recent fire at the Brooklyn plant of the H. W. Johns-Manville Company, New York, did but little damage and interfered in no way with business. The department affected by the fire was placed in operation the following day.

The Derby Gas Company, Derby, Conn., through its engineers, W. S. Barstow & Co., has recently purchased from the General Electric Company two mercury arc rectifier sets. These sets are to be used with the present inclosed direct current arc lamps, but are so designed that later on they can be used with magnetite arc lamps. Mr. Barstow arranged some time ago with the General Electric Company for a complete installation of mercury arc rectifiers and 1200 magnetite lamps for the Portland General Electric Company, and these are now in operation.

Oiling systems are being extensively introduced in engine rooms on account of the economy with which oil is used, the saving of time in attention over the old methods and saving of oil in handling, as with an oiling system it is only necessary to empty the contents of a barrel direct into the system. Among those who have purchased White Star oiling systems from the Pittsburgh Gage & Supply Company, Pittsburgh, Pa., the past few weeks are the following: Page Mfg. Company, New Bedford, Mass.; Merchants Ice & Coal Company, St. Louis, Mo.; Columbia Improvement Company, Columbus, Ga.; Atlantic Electric Light & Power Company, Atlantic City, N. J.; Power & Mining Machinery Company, Cudahy, Wis.

Baines, Mosler & Co., Allegan, Mich., manufacturers of kitchen cabinets, have added to their equipment an 8-in. molder, and are in the market for two new saws, a 40-hp. boiler and steam fixtures.

The Acme Flexible Clasp Company, Chicago, manufacturer of metal specialties, is erecting an addition to its plant, 60 x 100 ft., two stories high, fronting on Archer avenue and con-

necting with the main factory building. The upper floor will be used principally for office purposes, and the lower floor as an additional machine room. The additional equipment has been purchased, including a 250-hp. electric generator, one 60-hp. motor, one 50-hp. motor and four smaller motors, all of which were purchased from the Northern Electrical Mfg. Company, Madison, Wis. The company builds its own special machines, and now has a considerable number coming through the shops. The new quarters will be occupied in November.

The St. Louis Frog & Switch Company, St. Louis, Mo., has broken ground for its new \$100,000 plant, which will be erected on Easton avenue and the Terminal Belt Line Railway. The company recently acquired 3½ acres from the Terminal Railway on which to build the plant. The first building, covering a space 110 x 160 ft., is to be completed by January 1, and other buildings will be erected later. All requirements, including building materials and machinery, have been contracted for, the plant to be operated by electricity. The company is capitalized for \$5000, and this amount will be increased to between \$100,000 and \$200,000 about November 1. The officers are: John J. Lichter, president; R. S. Colnon, vice-president; R. E. Elstein, secretary and treasurer.

A. R. Mosler & Co., New York, mechanical and electrical engineers, have incorporated under the same name. Associated with Mr. Mosler is William Liebling.

The Cataract Engineering Company, Niagara Falls, N. Y., recently incorporated with a capital stock of \$2500, in addition to the manufacture of a patent lock used in connection with electric street lamps, will take up the manufacture of other specialties in the near future. Ralph L. MacDonald, general superintendent of the Buffalo & Niagara Falls Electric Light & Power Company, is interested.

The Cambridge Gas Light Company, Cambridge, Mass., states, at a hearing on a petition for the right to increase its capital stock, that it proposes to spend \$225,000 on additions to its plant.

The business of Gillette, Vibber & Co., New London, Conn., manufacturers of electrical specialties, has been incorporated under Connecticut laws as the Gillette-Vibber Company. The capital stock is \$20,000.

Frank H. Buhl, Joseph Riddell and Morris Bachman, the latter being president of the Sharon Steel Hoop Company, have organized a new company to erect a large pattern shop at Sharon, Pa.

The Reinforced Concrete Construction Company has opened an office in room 1034 Fulton Building, Pittsburgh, to engage as engineer and contractor in the construction of buildings, piers, &c.

Electrical Cutting of Steel Beams and Girders.

The fire at San Francisco, Cal., following the earthquake of April 18, left some difficult problems to be solved in the clearing away of debris for new buildings. One of the most serious of these is the removing of the tangled mass of structural steel. It occurred to R. E. Frickey that the electric arc might be employed here to advantage, and he carried out at the University of California some experiments to determine the possibilities of this use of the arc. As a result of extensive experiments, described by the *San Francisco Journal of Electricity, Power and Gas*, an electrode has been evolved which has proved successful. By means of this electrode a 15-in. beam was cut in two in 20 minutes. To make a corresponding cut with a hack saw would require several hours.

For the best and most economical results a current of about 250 amperes at from 90 to 100 volts is required. In starting a resistance is employed, but this may be cut out after the arc is formed. One necessary condition for success is the satisfactory protection of the operator. Not only the eyes, but the face and hands, must be covered, or they will be badly burned. An oilcloth hood having a rectangular opening in front of the eyes is employed, this opening being covered by a mask of oilcloth having a window of specially prepared glass when the arc is in operation. Gloves must be worn. Since it is not practical to obtain 110 volts for the work in San Francisco, and as it was not advisable to use the 220-volt system, since the neutral is grounded in that city, a portable generating set consisting of a gasoline engine driving a dynamo was arranged. This consists of a 25-kw. direct current generator belted to a 40-hp. single cylinder gas engine mounted on a truck. The selection of the equipment was limited to a considerable extent by the apparatus available in the city.

The Iron and Metal Trades

The drift is unmistakably upward, and it is apparent that some of the conservative interests who have been fighting against advances are less active in opposition. The consumption, present and prospective, is enormous, and the buying is on a very large scale. No better evidence of this can be furnished than the fact that during the first two weeks of the current month the United States Steel Corporation booked an average of 60,000 tons per day, which contrasts with a capacity of 33,000 tons per day.

Complaints of scarcity of labor come from all sections of the country and tell in the quantity of raw material raised from the ground and transported, and in the output of the manufacturing plants. Some of the leading independent lake ore mining companies have notified furnaces of their inability to supply the full quantities of ore contracted for.

The principal merchant furnaces in the Valleys are sold up tight into the second quarter of next year. On the other hand, the Steel Corporation now has 95 per cent. of its furnace capacity at work, and October is looked forward to as a record breaker in output.

One leading Iron producer in the South has this week sold an aggregate of 40,000 tons of Basic Pig to Western Steel makers, the bulk of it at \$15.50, Birmingham, but a round lot also at \$16. In the East the markets for Foundry, Forge and Basic Iron are being tested by large inquiries for forward delivery, but the majority of buyers still refuse to pay the higher prices asked.

The Rail mills have added to their orders 15,000 tons for the Soo line. A good deal of further tonnage is pending for Southwestern roads, and a Southern line, the South & Western Railway, is in the market for 27,000 tons.

Further large orders for Steel cars are in sight. The Vanderbilt lines expect to close for over 20,000 Steel cars during the next day or two, and some other large transactions are pending. On the lakes five new boats have been contracted for, two of them for delivery during 1908. Structural work is coming out steadily. The most interesting, though not most important transaction of this character, refers to a number of Steel buildings for San Francisco, the tonnage aggregating 5000 tons. The work was taken by the American Bridge Company.

The raising of prices on Steel Bars is becoming more general, and the market has stiffened perceptibly.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type,
Declines in Italics.

At date, one week, one month and one year previous.

	Sept. 19, 1906.	Sept. 12, 1906.	Aug. 22, 1906.	Sept. 20, 1905.
PIG IRON, Per Gross Ton:				
Foundry No. 2, Standard, Philadelphia	\$20.50	\$20.50	\$19.25	\$16.50
Foundry No. 2, Southern, Cincinnati	19.00	18.75	17.50	14.25
Foundry No. 2, Local, Chicago	19.75	19.75	19.50	16.00
Bessemer, Pittsburgh	19.00	19.60	19.10	15.85
Gray Forge, Pittsburgh	18.35	18.35	17.85	14.60
Lake Superior Charcoal, Chicago	20.00	20.00	19.50	17.00
BILLETS, &c., Per Gross Ton:				
Bessemer Billets, Pittsburgh	28.00	28.00	28.00	25.00
Forging Billets, Pittsburgh	34.00	34.00	33.00	29.00
Open Hearth Billets, Philadelphia	32.00	30.50	29.00	27.00
Wire Rods, Pittsburgh	34.00	34.00	34.00	31.00
Steel Rails, Heavy, Eastern Mill	28.00	28.00	28.00	28.00
OLD MATERIAL, Per Gross Ton:				
O. Steel Rails, Chicago	16.50	16.50	15.00	14.50
O. Steel Rails, Philadelphia	18.25	18.00	17.00	16.25
O. Iron Rails, Chicago	23.50	23.50	22.00	22.00
O. Iron Rails, Philadelphia	24.00	24.00	21.50	22.00
O. Car Wheels, Chicago	20.00	20.00	18.50	16.00
O. Car Wheels, Philadelphia	19.50	17.50	17.00	15.50
Heavy Steel Scrap, Pittsburgh	16.50	16.75	16.50	16.00
Heavy Steel Scrap, Chicago	16.50	16.50	14.50	14.50

FINISHED IRON AND STEEL,

	Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia	1.83½	1.73½	1.73½	1.68½	
Common Iron Bars, Chicago	1.71½	1.71½	1.66½	1.65	
Common Iron Bars, Pittsburgh	1.60	1.60	1.50	1.75	
Steel Bars, Tidewater, New York	1.64½	1.64½	1.64½	1.64½	
Steel Bars, Pittsburgh	1.50	1.50	1.50	1.50	
Tank Plates, Tidewater, New York	1.74½	1.74½	1.74½	1.74½	
Tank Plates, Pittsburgh	1.60	1.60	1.60	1.60	
Beams, Tidewater, New York	1.84½	1.84½	1.84½	1.89½	
Beams, Pittsburgh	1.70	1.70	1.70	1.70	
Angles, Tidewater, New York	1.84½	1.84½	1.84½	1.89½	
Angles, Pittsburgh	1.70	1.70	1.70	1.70	
Skelp, Grooved Steel, Pittsburgh	1.57½	1.57½	1.57½	1.50	
Skelp, Sheared Steel, Pittsburgh	1.60	1.60	1.60	1.55	

SHEETS, NAILS AND WIRE,

	Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, No. 27, Pittsburgh	2.40	2.40	2.40	2.20	
Wire Nails, Pittsburgh	1.85	1.85	1.85	1.75	
Cut Nails, Pittsburgh	1.80	1.75	1.75	1.60	
Barb Wire, Galv., Pittsburgh	2.30	2.30	2.30	2.20	

METALS, Per Pound:

	Cents.	Cents.	Cents.	Cents.
Lake Copper, New York	19.25	19.12½	18.75	16.00
Spelter, St. Louis	6.25	5.95	5.90	5.85
Lead, New York	6.00	5.90	5.75	4.85
Lead, St. Louis	5.85	5.80	5.67½	4.72½
Tin, New York	40.00	40.30	41.37½	32.00
Antimony, Hallett, New York	24.00	24.00	24.00	14.00
Nickel, New York	45.00	45.00	45.00	40.00
Tin Plate, Domestic, Bessemer, 100 lb., New York	\$3.94	\$3.94	\$3.94	\$3.74

Chicago.

FISHER BUILDING, September 19, 1906.—(By Telegraph.)

With the advent of the fall season, specifications from consumers for all classes of finished material show a marked increase, and the tonnage accumulation on mill order books is the heaviest on record. To complete undertaken improvements and extensions before the winter months, Western railroads are making insistent demand for the early delivery of Rails and Track Supplies, and structural fitters are likewise crowding the mills for material. With the operation of implement plants at their capacity the consumption of Bars and Merchant Shapes shows a tremendous increase, and to meet the needs of the greatest number of shipments continue to be prorated. Concerted action relative to an advance of \$2 on Steel Bars having failed, makers are individually marking up quotations. The Crucible Steel Company of America this week advanced prices to a basis of 1.60c., Pittsburgh, following similar action taken by the Cambria Steel Company and the Republic Iron & Steel Company. The subsidiary companies of the United States Steel Corporation will, however, continue to maintain the association price, having decided against any advance, pursuant to the corporation policy to hold prices of finished material at its prevailing level. The Steel shortage has developed an inquiry for 2000 to 10,000 tons of Axle Billets for delivery through the remainder of this year and the first half of 1907. The tonnage, however, remains unplaced, as none of the mills is in position to make shipment before March. In sympathy with the increased cost of Pig Iron, Cast Iron Pipe has again been advanced \$1, and deliveries on all but the larger sizes cannot be made before December. Scattering orders for Steel for bridges and buildings placed with the American Bridge Company and local fitters aggregate 2000

tons. Several buildings for San Francisco, requiring 1000 tons each, are being figured on, and the indications are that new projects will proceed more rapidly than during the summer months, as the Structural tonnage up to the present, considering the extent of destruction, has been comparatively small. Notwithstanding the heavy buying earlier in the year, considerable new Steel Bar tonnage continues to be placed with the mills, one producer having booked a total of 15,000 tons this month. Buying of Track Material for next year shows no abatement, one concern already having closed contracts for 50,000 tons of Spikes. The production of local Foundry Iron will be increased 600 tons daily about December 1, when two new stacks will be blown in, orders now being taken against their output through the first half. Transactions in Southern Basic aggregate 11,000 tons.

Pig Iron.—The local Pig Iron situation will be materially relieved about December 1 by the blowing in of two new furnaces having a daily capacity of 600 tons, and orders against their output through the first half of next year are now being booked. These stacks are being built by the Northwestern Iron Company, Mayville, Wis., and the Federal Furnace Company of this city, respectively, and their product will consist of Malleable Bessemer and Foundry grades. For extended delivery prices ranging from \$19.25 to \$20 are being quoted for No. 2, but as yet the bookings have not been very heavy. Interest among foundries in the matter of future needs has to a large extent subsided, although it is probable that the Allis-Chalmers Company will shortly come into the market for the first half of 1907, having made inquiry this week for 1000 tons for shipment the remainder of the year. The sale of 3000 tons of Charcoal Iron for the last three months of this year at \$20, Chicago, is reported, but an inquiry for 10,000 tons from a Car Wheel maker was withdrawn, owing to a hitch in the placing of the contract for Wheels. The Tennessee Coal, Iron & Railroad Company has re-entered the market as a seller of Basic Iron and has sold 6000 tons to a Western consumer for October, November and December delivery at \$16, Birmingham. At St. Louis two lots of 2000 and 3000 tons respectively, for first quarter delivery, were sold on the basis of \$20.50 and \$21, f.o.b. St. Louis. For delivery through the first half Southern furnaces are holding No. 2 at \$15.50, while spot Iron has slightly declined and is to be had at \$16. Virginia producers have advanced Basic 50c. a ton to \$18 at furnace. We quote as follows, f.o.b. Chicago:

Lake Superior Charcoal.....	\$20.00 to \$20.50
Northern Coke Foundry, No. 1.....	20.25 to 20.50
Northern Coke Foundry, No. 2.....	19.75 to 20.00
Northern Coke Foundry, No. 3.....	19.25 to 19.50
Northern Scotch, No. 1.....	20.00 to 20.50
Ohio Strong Softeners, No. 1.....	19.80 to 20.05
Ohio Strong Softeners, No. 2.....	19.30 to 19.55
Southern Coke, No. 1.....	19.90 to 20.40
Southern Coke, No. 2.....	19.40 to 19.90
Southern Coke, No. 3.....	18.90 to 19.40
Southern Coke, No. 4.....	18.40 to 18.90
Southern Coke, No. 1 Soft.....	19.90 to 20.40
Southern Coke, No. 2 Soft.....	19.40 to 19.90
Southern Gray Forge.....	16.90 to 17.40
Southern Mottled.....	16.65 to 17.15
Malleable Bessemer.....	20.00 to 20.50
Standard Bessemer.....	20.55 to 20.80
Jackson Co. and Kentucky Silvery, 6 %.....	22.30 to 22.80
Jackson Co. and Kentucky Silvery, 8 %.....	23.30 to 23.80
Jackson Co. and Kentucky Silvery, 10 %.....	24.30 to 24.80

Metals.—Spelter has been advanced 5c. per 100 lbs. All other metals are without change in price, but are particularly active, especially Copper. While some weakness developed in the latter metal during the week, the general tone of the market possesses such strength that no lack of confidence obtains that there will be no decline in values for a long time to come. We quote: Casting Copper, 19c. to 19½c.; Lake, 19¼c. to 19¾c., in car lots; small lots, ¼c. to ¾c. higher; Pig Tin, carloads, 42½c.; small lots, 43¼c. to 43¾c.; Spelter, prompt delivery, 6.25c. to 6.35c. for car lots; Lead, desilverized, 6c. to 6.10c., for 50-ton lots; Corroding, 6.67½c. to 6.77½c., for 50-ton lots; on car lots, 2¼c. per 100 lb. higher; Cookson's Antimony, 28c., and other grades, 26c. to 27c.; Sheet Zinc is 7.75 list, f.o.b. LaSalle, in car lots of 60-lb. casks. On Old Metals we quote: Copper Wire, 16½c.; Heavy Copper, 16½c.; Copper Bottoms, 15½c.; Copper Clips, 16¼c.; Red Brass, 15¼c.; Red Brass Borings, 13¼c.; Yellow Brass, 12¼c.; Yellow Brass Borings, 10¼c.; Light Brass, 8¼c.; Lead Pipe, 5.40c.; Tea Lead, 5c.; Zinc, 5c.; Pewter, No. 1, 26c.; Tin Foil, 32c.; Block Tin Pipe, 27¼c.

(By Mail.)

Billets and Rods.—A large Western car interest has inquired for from 2000 to 10,000 tons of Axle Billets, for deliveries extending through the first half of next year. Eastern mills have practically withdrawn from the market through the first quarter of 1907 and it is extremely doubtful if this order can be placed with any of the Steel producers, situated as they are at present. Forging Billets are quoted at from \$34 to \$37, Chicago, and are only to be had in occasional small lots at these prices. Owing to the heavy bookings of both Wire and Chain Rods during the month of August demand has fallen off somewhat and manufacturers are largely engaged in making deliveries on the heavy specifications that are now being received. We quote Bessemer

and Basic Wire and Chain Rods at \$36 to \$37, f.o.b. Chicago.

Rails and Track Supplies.—Exceptionally heavy specifications for Standard Sections have been received by the Illinois Steel Company during the week from Western roads that are anxious to complete construction work before cold weather sets in. New tonnage, however, is comparatively light, the local office of the Pennsylvania Steel Company having received an order for 1800 tons from the Queen & Crescent for this year's delivery. There is no falling off in the demand for Track Supplies, one large producer having orders booked for deliveries extending through next year for 50,000 tons of Spikes, amounting to 500,000 kegs. On Light Rails the Illinois Steel Company is unable to make deliveries in less than five months. Quotations are as follows: Angle Bars, accompanying Rail orders, 1906 delivery, 1.50c.; carload lots, 1.75c.; Spikes, 2.27½c. to 2.50c., according to delivery; Track Bolts, 2.65c. to 2.75c., base, Square Nuts, and 2.80c. to 2.90c., base, Hexagon Nuts. The store prices on Track Supplies range from 0.15c. to 0.20c. above mill prices. Light Rails, 30 to 45 lb. sections, \$29 to \$30; 25-lb., \$31; 20-lb., \$32; 16-lb., \$33; 12-lb., \$34, f.o.b. mill. Standard Sections, \$28, f.o.b. mill, full freight to destination.

Structural Material.—The reconstruction of San Francisco is not being proceeded with quite as rapidly as anticipated several months ago, as up to the present time not more than five or six contracts have been let for large buildings, involving from 500 to 1000 tons of Steel. At present Structural fitters are figuring on several buildings requiring 1000 tons of Material, but nothing heavier has yet come up for consideration. New work is limited largely to small undertakings, the American Bridge Company having received the following contracts: Bridges for the Chicago, Elgin & Aurora electric road, 300 tons; municipal library for the city of Denver, 300 tons; a bank at New Orleans, 475 tons, and 250 tons each from the American Smelting & Refining Company and the United States Smelting & Refining Company. Warehouse stocks in the hands of both distributors and fitters are heavier than at any time this year, and the pressure on the mills has to a large extent been relieved. Quotations are as follows: Beams and Channels, 3 to 15 in., inclusive, 1.86½c.; Angles, 3 to 6 in., ¼-in. and heavier, 1.86½c.; larger than 6 in. on one or both legs, 1.96½c.; Beams, larger than 15 in., 1.96½c.; Zees, 3 in. and over, 1.86½c.; Tees, 3 in. and over, 1.91½c., in addition to the usual extras for cutting to extra lengths, punching, coping, bending and other shop work.

Plates.—The situation both as to Universal and Sheared Plates is improving daily, and deliveries cannot be made by the Illinois Steel Company in less than 60 days. Eastern mills are not promising shipment before the first of the year, whereas early in August deliveries could be had inside of 10 days. Heavy specifications are being received from shipbuilders and Steel car manufacturers, and the indications are that their requirements will increase through the fall months. Quotations are as follows: Tank Plates, ¼-in. and heavier, wider than 6¼ and up to 100 in. wide, inclusive, car lots, Chicago, 1.76½c.; 3-16 in., 1.86½c.; Nos. 7 and 8 gauge, 1.91½c.; No. 9, 2.01½c.; Flange quality, in widths up to 100 in., 1.86½c., base, for ¼ in. and heavier, with the same advance for lighter weights; Sketch Plates, Tank quality, 1.86½c.; Flange quality, 1.96½c. Store prices on Plates are as follows: Tank Plate, ¼-in. and heavier up to 72 in. wide, 2c. to 2.10c.; from 72 to 96 in. wide, 2.10c. to 2.20c.; 3-16 in. up to 60 in. wide, 2.10c. to 2.20c.; 72 in. wide, 2.35c. to 2.45c.; No. 8, up to 60 in. wide, 2.15c. to 2.25c.; Flange and Head quality, 0.25c. extra.

Sheets.—In the matter of deliveries the Sheet situation has improved, although shipments on Blue Annealed Black Sheets, 16 gauge and heavier, are still deferred from four to six weeks. Concessions of \$1 a ton are reported on some of the lighter gauges, although these are by no means general. Quotations are as follows: Blue Annealed, No. 10, 1.91½c.; No. 12, 1.96½c.; No. 14, 2.01½c.; No. 16, 2.11½c.; Box Annealed, Nos. 17 to 21, 2.41½c.; Nos. 22 to 24, 2.46½c.; Nos. 25 and 26, 2.51½c.; No. 27, 2.56½c.; No. 28, 2.66½c.; No. 29, 2.81½c.; No. 30, 2.91½c. Galvanized Sheets, Nos. 10 to 14, 2.61½c.; Nos. 15 and 16, 2.81½c.; Nos. 17 to 21, 2.96½c.; Nos. 22 to 24, 3.11½c.; Nos. 25 and 26, 3.31½c.; No. 27, 3.51½c.; No. 28, 3.71½c.; No. 30, 4.21½c. Sheets from store: Blue Annealed, No. 12, 2.15c. to 2.25c.; No. 14, 2.20c. to 2.30c.; No. 16, 2.30c. to 2.40c.; Box Annealed, Nos. 18 to 20, 2.60c. to 2.70c.; Nos. 22 to 24, 2.65c. to 2.75c.; No. 26, 2.70c. to 2.80c.; No. 28, 2.85c. to 2.95c.; No. 30, 3.25c. to 3.35c. Galvanized from store: Nos. 10 to 20, 3.10c. to 3.20c.; Nos. 22 to 24, 3.35c. to 3.45c.; No. 26, 3.45c. to 3.55c.; No. 27, 3.55c. to 3.75c.; No. 28, 3.85c. to 3.95c.; No. 30, 4.45c. to 4.55c.

Bars.—Owing to the failure to secure united action on the part of the manufacturers of Steel Bars to advance prices \$2 a ton the producers are taking it upon themselves to mark up quotations individually, the Crucible Steel Company being the latest to advance quotations to the basis of 1.60c., Pittsburgh. This price is now also being asked by the Cambria Steel Company and the Republic Iron &

Steel Company, although the mills of the United States Steel Corporation continue to quote 1.50c., Pittsburgh, equivalent to 1.66½c., Chicago. The corporation has definitely decided to make no advance notwithstanding the action of other manufacturers, and in view of this ultimatum no meeting of the Steel Bar Association is necessary. On Iron Bars some of the independent manufacturers are willing to sell at 1.66½c., Chicago, providing the tonnage is desirable. Current business, however, in small lots continues to be placed on the basis of 1.55c. to 1.60c., Pittsburgh. We quote as follows: Iron Bars, 1.71½c. to 1.76¼c.; Steel Bars, 1.66½c. to 1.76¼c., both half extras; Hoops, 2.06¼c., extras as per Hoop card; Bands, 1.66½c., as per Steel card; Soft Steel Angles and Shapes, 1.66½c., half extras. Store prices are as follows: Bar Iron, 2.10c.; Steel Bars, 1.85c., and as high as 2c. is asked on certain scarce sizes; Steel Bands, 1.85c. to 1.90c., half extras; Soft Steel Hoops, 2.30c. to 2.40c., full extras.

Merchant Pipe.—Although Western distributors are not buying freely to cover their future requirements, nevertheless their orders from month to month show a large increase over their needs specified during the same period last year. Concessions have been entirely withdrawn, and it is reported that some of the butt weld mills of the independent manufacturers are idle owing to the low prices that are prevailing. Sales are made on the basis of 81 and 5 off the list, Pittsburgh, and discounts in car lots, Chicago, are as follows: Black Steel Pipe, 79.35 per cent. on the base sizes, ¼ to 6 in., and Galvanized, 69.35 per cent. Iron Pipe is quoted from 1½ to 2 points higher. From store in small lots Chicago jobbers are quoting 76½ to 77 per cent. on Black Steel Pipe, ¼ to 6 in.

Boiler Tubes.—The store demand is exceedingly heavy, and the specifications that the mills are receiving from the large jobbers on contracts placed earlier in the year are proportionately large. There is a dearth of new business, however, which is due to the fact that large consumers covered their requirements immediately following the last price reduction. Mill quotations are well maintained, as follows, on base sizes, 2¾ to 5 in., in car lots: Steel Tubes, 68.35; Iron, 55.35; Seamless, 50.35; 2½ in. and smaller and lengths over 18 ft., and 2½ in. and lengths over 22 ft., 10 per cent. extra. Store prices are unchanged, as follows:

	Steel.	Iron.	Seamless.
1 to 1½ in.	40	35	42½
1½ to 2½ in.	50	35	35
2½ in.	52½	35	30
2½ to 5 in.	60	47½	42½
6 in. and larger.	80	35	..

Merchant Steel.—One of the leading producers reports that the aggregate tonnage, together with the value of the product shipped into this market during the month of August, was greatly in excess of all previous records for the same period. This same manufacturer likewise had a record breaking month in this territory during July. Specifications continue at a high point and are greatly in excess of production. Quotations are as follows: Planished or Smooth Finished Tire Steel, 1.86¼c.; Iron Finish, up to 1½ x ½ in., 1.81½c.; Iron Finish, 1½ x ½ in. and larger, 1.66½c., base; Channels for solid rubber tires, ¾ to 1 in., 2.16¼c., and 1½ in. and larger, 2.06¼c.; Smooth Finished Machinery Steel, 1.91½c.; Flat Sleigh Shoe, 1.71½c.; Concave and Convex Sleigh Shoe, 1.96¼c.; Cutter Shoe, 2.35c.; Toe Calk Steel, 2.21½c.; Railway Spring, 1.86¼c.; Crucible Tool Steel, 6¼c. to 8c., and still higher prices are asked on special grades. Shafting, 50 per cent. off in car lots and 45 per cent. in less than car lots, in base territory.

Cast Iron Pipe.—Contracts for approximately 1100 tons of 6 and 8 in. Pipe were placed by the city of Milwaukee with the United States Cast Iron Pipe & Foundry Company. This practically disposes of all the municipal business for the fall months. Current demand is exceedingly heavy, railroad requirements being larger than ever before, owing to the installation of independent water systems by many of the Western lines. Recent Pig Iron advances have resulted in higher prices on all sizes of Pipe, quotations having been marked up \$1 a ton this week, as follows: Water Pipe, 4 in., \$34; 6, 8, 10 and 12 in., \$33; over 12 in., \$32, with \$1 extra for Gas Pipe.

Coke.—The shortage of cars in the Connellsville region, resulting in delayed deliveries on contracts to Western consumers, has developed a strong spot market, and sales of material on track have been made at \$6 a ton during the past few days. On contracts for extended delivery 72-hr. Connellsville Coke is quoted at \$5.75 to \$5.90, Chicago, and Virginia grades are held at \$5.25. By-Product Coke is unchanged at \$5.65 to \$5.90.

Old Material.—Increased activity characterizes the Scrap market, several large consumers having made heavy purchases of Wrought and Cast grades. The J. I. Case Threshing Machine Company purchased 1000 tons of Cast Scrap at \$15.75, and large purchases of Wrought Scrap and other iron mill grades were made by the Republic Iron & Steel Company. The Inland Steel Company likewise continues to buy heavy melting Steel freely, and the market is now firmly established on the basis of \$16.50. The Chicago,

Milwaukee & St. Paul Road will this week dispose of 1000 tons of material, and the Pere Marquette has issued a list covering 500 tons of assorted grades. While prices are practically unchanged, the market is stronger and has an upward tendency. Quotations on gross tons, car lots, f.o.b. Chicago, are as follows:

Old Iron Rails	\$23.50 to \$24.00
Old Steel Rails, 4 ft. and over	17.50 to 18.00
Old Steel Rails, less than 4 ft.	16.50 to 17.00
Heavy Relaying Rails, subject to inspection, 50 lb. and under	28.50 to 29.00
Old Car Wheels	20.00 to 20.50
Heavy Melting Steel Scrap	16.50 to 17.00
Frogs, Switches and Guards	16.50 to 17.00
Mixed Steel	14.00 to 14.50

The following quotations are per net ton:

Iron Fish Plates	\$19.00 to \$19.50
Iron Car Axles	24.50 to 25.00
Steel Car Axles	20.50 to 21.00
No. 1 Railroad Wrought	16.00 to 16.50
No. 2 Railroad Wrought	15.50 to 16.00
Railway Springs	15.00 to 16.00
Locomotive Tires, smooth	15.50 to 16.00
No. 1 Dealers' Forge	13.50 to 14.00
Mixed Bushing	11.50 to 12.00
Iron Axle Turnings	10.50 to 11.00
Soft Steel Axle Turnings	10.50 to 11.00
Machine Shop Turnings	10.00 to 10.50
Cast Borings	9.00 to 9.50
Mixed Borings, &c.	9.00 to 9.50
No. 1 Mill	10.00 to 10.50
No. 2 Mill	9.00 to 9.50
No. 1 Rollers, cut to Sheets and Rings	10.50 to 11.00
No. 1 Cast Scrap	15.50 to 16.00
Store Plate and Light Cast Scrap	13.00 to 13.50
Railroad Malleable	15.00 to 15.50
Agricultural Malleable	14.50 to 15.00

Philadelphia.

REAL ESTATE TRUST BUILDING, September 18, 1906.

Notwithstanding the fact that the furnace report for August was less favorable for consumers than expected, the feeling of anxiety in regard to supplies is distinctly easier. The change is remarkable under the circumstances and is worth noting by those who were looking for higher prices. There may not be much chance for a decline, but there is much less chance that prices can be maintained at the high level of the first two weeks in September. This cannot at the moment be figured out to a certainty from a statistical standpoint, but the change of attitude by consumers indicates very clearly that the scare is pretty well over and that prices will soon settle down to normal proportions. With spot No. 2 X Foundry at \$22.50, and at \$1 to \$2 less for deliveries three to six months later, a readjustment of values is unavoidable. Some are trying to make the adjustment to a higher level, but unless all signs fail it will be in the other direction; not much lower perhaps, but it is hardly likely that much more No. 2 X will be taken at \$22. Instances might be given in which recent sales have been made at less than \$20, but they would be no more a fair representation of the market than \$22 would be. What the exact figures will be will depend upon how the furnaces work during September. The expectation is that production will show a good increase, and when producers find that they have a little more Iron than they expected to have they will not be as rigid in regard to prices as they were when they could not deliver all that they had engaged to deliver. This change is already manifest in the easier prices accepted for this and next month's deliveries. Moreover, as Steel making Irons have made no advance in proportion to Foundry grades the chances are that furnaces will be switched to Foundry Irons, which pay much better than Steel making Irons at the prevailing difference in prices. Consumption is very large, however, and if prices are to ease off it must be the result of a larger production rather than a decreased consumption. It is a happy combination of circumstances, however, when all efforts are directed to keeping up with the demand instead of fighting for business sufficient to keep the wheels moving.

Pig Iron.—Prices are not fully settled, but as we have already said, there is not as much Iron selling at high prices as there was a week or two ago, and while some of the low figures have been advanced a little, it is not much. Probably \$20.50, delivered, for No. 2 X Foundry is an inside figure, but orders are being taken at that for late 1906 or early 1907. Some quote 50 cents to \$1 more and are making sales, but it is a tentative position and not entirely clear which of the quotations will most nearly represent the market a month hence. It is a notable fact, however, that there is much less anxiety in regard to a shortage than there was until within the past few days. Southern furnaces will ultimately decide the question of prices, as it will depend very largely on how much metal they can spare for this and other Northern points. The output in the South is said to be the greatest on record, and as the working conditions are highly favorable, the high prices in the Northern markets will no doubt be attractive to them. Present quotations for deliveries in this territory are about \$20.50 for No. 2 X Foundry for 1906, and \$19.50 for the first and second quarters of 1907. These are believed to be maximum prices, and with anything like fair supplies from this source it will be

no easy matter to maintain higher prices for local irons. Basic Iron has become extremely dull, no sales having been reported for several days past. There is some inquiry for first quarter of 1907, for which \$19 delivered has been quoted, but without bringing business. This might perhaps be shaded to \$18.75, but there is no urgency either to buy or sell. Deliveries are said to be a little better, and even for quick deliveries buyers appear to show no anxiety. Low Phosphorus is more active, one sale of 3500 tons having been made for 1907 deliveries at \$23.50 f.o.b. Lehigh furnace. A 1500-ton lot of misfit was also sold at \$24.25, Philadelphia delivery, and small lots standard makes at \$24.75 to \$25. The entire market, however, is in a most satisfactory condition, as almost anything can be sold at good prices without going far to find a buyer or to argue about what the article is worth. Spot lots or early October command premiums of probably \$1 per ton, but the market is fairly represented by the following quotations:

No. 1 X Foundry.....	\$21.50 to \$22.00
No. 2 X Foundry.....	20.50 to 21.00
No. 2 Plain.....	19.50 to 20.00
Standard Gray Forge.....	17.75 to 18.25
Ordinary Gray Forge.....	17.25 to 17.50
Basic.....	18.50 to 19.00
Low Phosphorus.....	24.75 to 25.00
Malleable.....	21.00 to 21.50

Steel.—There is an immense demand for Steel, and if prompt deliveries could be made a very heavy tonnage would be placed. The mills are crowded with business, however, and for such lots as could be shipped promptly \$32 to \$33 would be freely paid for ordinary rolling Steel; Forging Billets from \$36 to \$40.

Steel Alloys.—Prices are hard to quote, as but little business is being done, but higher figures are named for everything. Ferromanganese is quoted at \$92 to \$95 for September shipments, \$89 to \$90 for last quarter and \$82 to \$85 for 1907; Ferrosilicon, spot or September, \$96 to \$98, and 20 per cent. Spiegel, \$36.50 to \$37.50.

Plates.—There is about all the business than can be handled, although the individual orders are not excessive. There is a good general demand, however, and not only has the new tonnage been large, but specifications are unusually good. Prices are unchanged but firm, as follows:

	Carload. Cents.	Part carload. Cents.
Tank, Bridge and Boat Steel.....	1.73½	1.78½
Flange or Boiler Steel.....	1.83½	1.88½
Marine.....	2.13½	2.18½
Locomotive Firebox Steel.....	2.23½	2.28½
The above are base prices for ¼-in. and heavier. In extras apply:		
3-16-in. thick.....		\$0.10
Nos. 7 and 8, B. W. G.....		.15
No. 9, B. W. G.....		.25
Plates over 100 to 110 in.....		.05
Plates over 110 to 115 in.....		.10
Plates over 115 to 120 in.....		.15
Plates over 120 to 125 in.....		.25
Plates over 125 to 130 in.....		.50
Plates over 130 in.....		1.00

Structural Material.—Business is good, but the mills seem to be able to handle it with a fair degree of promptness. The new and increased capacity for production has been a great relief to the trade, but is none too great, and became effective none too soon. Consumption is no doubt larger than ever before, but no great inconvenience is felt in regard to deliveries, which are fairly prompt within 30 to 60 days. Prices are unchanged as follows: Beams, Channels and Angles, 1.83½c. to 2c., delivered.

Bars.—There is a strong demand for Bars, and prices for both Iron and Steel look as though they would be higher in the near future. Some of the local mills are not in operation owing to wage difficulties, and it is said that there is not much prospect for an early settlement. Deliveries are fairly prompt, however, and for the present prices for prompt shipments are quoted 1.83½c. to 1.88½c. for either Iron or Steel Bars. Nominal quotations are somewhat lower than these figures, but it is almost impossible to place orders.

Sheets.—The demand is strong and prices are about a tenth dearer, and are quoted as follows for ordinary lots and a tenth less for mill shipments: Nos. 18 to 20, 2.50c.; Nos. 22 to 24, 2.60c.; Nos. 25 and 26, 2.70c.; No. 27, 2.80c., and No. 28, 2.90c.

Old Material.—Prices are higher and the feeling is very excited. There is an unconfirmed report that the Eastern mills formed a combination to take all the Scrap that the railroads in this territory had to offer, but it is claimed that most of the tonnage was in Rails for rerolling and that only a small proportion was Melting Scrap. Dealers have paid \$18.25, but mills still insist that they are not paying more than \$18. The supply is small, however, and it is almost certain that higher figures will rule in the near future; some are sanguine enough to expect over \$20. Rolling Mill Scrap is also much higher, and sellers expect to see still higher prices for all their holdings. Bids and offers for deliveries in buyers' yards are about as follows:

Steel Crops.....	\$18.25 to \$18.50
No. 1 Steel Scrap.....	18.00 to 18.25
Low Phosphorus Scrap.....	22.50 to 23.00
Old Steel Axles.....	22.00 to 22.50
Old Iron Axles.....	30.00 to 31.00
Old Iron Rails.....	24.00 to 25.00
Old Car Wheels.....	19.50 to 20.50
Choice Scrap, R. R. No. 1 Wrought.....	22.50 to 23.00
Choice No. 1 Yard Scrap.....	19.50 to 20.50
Long and Short.....	17.50 to 18.00
Machinery Scrap.....	17.50 to 18.25
Wrought Iron Pipe.....	16.00 to 16.50
No. 1 Forge Fire Scrap.....	14.00 to 15.00
No. 2 Light Ordinary.....	11.50 to 12.00
Wrought Turnings.....	13.75 to 14.00
Axle Turnings, Choice Heavy.....	14.50 to 15.00
Stove Plate.....	13.25 to 13.75
Cast Borings.....	11.50 to 12.00

Pittsburgh.

PARK BUILDING, September 19, 1906.—(By Telegraph.)

Pig Iron.—The Pig Iron market is quiet, largely for the reason that consumers are pretty well covered and the furnaces are sold up, but little Iron being available for delivery over the balance of this year. Sellers who have any Bessemer Iron for delivery this year can get \$18.75, Valley furnace, for it, and there are reports that several small sales for prompt delivery have been made at \$19, at Valley furnace. Basic Iron is firm at \$18.50, at furnace, but the demand is quiet. There is a moderate inquiry for Foundry Iron, Northern brands of No. 2 being held at \$18.50, Valley furnace, for first quarter delivery. For shipment over the balance of this year small lots of No. 2 have sold as high as \$19.50 to \$20, Valley furnace. Forge Iron is quite firm at \$17.50 to \$17.75, at furnace.

Steel.—The shortage in the supply of Steel shows some signs of easing up, but the mills are still much behind in deliveries, and Bessemer and Open Hearth Billets and Bars are hard to obtain for prompt delivery. Bessemer Billets continue to bring about \$28 and Open Hearth \$29 to \$30, Pittsburgh. Sheet and Tin Bars in long lengths for prompt delivery bring about \$30, Pittsburgh. On September 20 the Carnegie Steel Company will announce its price on Sheet and Tin Bars for last quarter delivery, but it is so far behind in deliveries of such Bars that it will require the greater part of the last quarter to deliver the Steel that has already been sold. It seems certain that the price of Long Bars for the last quarter will be fixed at \$30, Pittsburgh.

(By Mail.)

The situation remains exceedingly strong, and it would seem that with the sold-up condition of the blast furnaces, Steel works and finishing mills present satisfactory conditions are absolutely assured for the balance of this year and through the first quarter of next year. There is but little Bessemer, Basic or Foundry Iron for sale for delivery this year, and the furnaces have a heavy tonnage booked for delivery in first quarter and first half of next year. Bessemer Iron for prompt delivery commands \$18.75, at Valley furnace, and Basic about \$18.50, at furnace. Northern No. 2 Foundry for first quarter delivery is held at \$18.50, at furnace, while small lots have sold for prompt delivery as high as \$20, at furnace. The opinion is general both among makers and consumers of Pig Iron that prices are high enough, and, with consumers pretty well covered, it would seem that top of the market has been reached. The supply of Steel is still short, but shows some signs of getting better. The tonnage being made in the two mills at Youngstown is commencing to be felt, and it is expected that by November the supply of Steel will be easier. New demand for Finished Iron and Steel is not as heavy this month as it was in August, but this is to be expected when the enormous buying movement last month is considered. All the leading Iron and Steel concerns report that they have a heavy tonnage on their books, with specifications coming in freely, and they are all more or less behind in deliveries. On some lines of Finished Material, such as Steel and Iron Bars, Sheets and Structural Sheets, premiums over official prices are being paid for prompt deliveries. Indications are that the mills will have a full run of work during the winter months.

Ferromanganese.—We note a fair demand for Ferro, but prices are easier. Prompt 80 per cent. Ferro is being offered at \$85, while for balance of the year delivery \$80 to \$82 is quoted. We are advised of a sale of about 100 tons of foreign 80 per cent. Ferro, for delivery over the last four months of this year, at about \$80, Pittsburgh.

Wire Rods.—We note a continued scarcity and prices are firm. Bessemer Rods are held at \$34 to \$34.50, while Chain Rods from Bessemer stock are offered at \$33, Pittsburgh. Rods rolled from Open Hearth stock can hardly be had at any price.

Muck Bar.—We note a fair inquiry, and the recent advance in prices owing to scarcity of Forge Iron is being sus-

tained. We quote best grades of Muck Bar, made from all Pig Iron, at \$30.50 to \$31, while Muck Bar made from part Scrap is held at \$27.50 to \$28, Pittsburgh.

Skelp.—The demand for Skelp continues fairly active and a leading Pipe mill has recently bought several round lots of Grooved and Sheared Iron Skelp, being unable to supply its own needs. Prices are firm and we quote: Grooved Steel Skelp, 1.57½c. to 1.60c.; Sheared Steel Skelp, 1.60c. to 1.65c.; Grooved Iron Skelp, 1.65c. to 1.70c.; Sheared Iron Skelp, 1.75c. to 1.80c., Pittsburgh, these prices being for ordinary widths and gauges.

Steel Rails.—In the past week the Carnegie Steel Company has entered orders for 35,000 to 40,000 tons of Steel Rails for 1907 delivery, this company having no Rails to offer for this year. We note a continued heavy demand for Light Rails, 16 to 20 lb. Sections being firm at \$31, and 25 to 45 lb. Sections at \$30. The Carnegie Steel Company is practically sold up on Light Rails for delivery this year. We quote Standard Sections at \$28 at mill.

Structural Material.—It now develops that the McClintic-Marshall Construction Company has taken about 4000 tons of viaduct work for the Pittsburgh, Butler & New Castle trolley line, instead of 1800 tons, as stated last week. This company has an enormous tonnage on its books, having practically all the work it can take care of up put of its new Structural mill. The Jones & Laughlin Company rolled and fabricated 2200 tons of Steel for the Union Bank Building in this city, and delivered it ahead of contract time. This is certainly a creditable record in these strenuous times, and was only possible by the excellent output of its new Structural mill. The Jones & Laughlin Company also furnished 1800 tons of Steel for the Commonwealth Building in this city, which adjoins the Union Bank Building, and delivered it on time. A great many small orders are coming in to the Structural concerns which aggregate considerable tonnage. Prices are firm, but there are no signs whatever of any advance, and this will be opposed by the leading interests. We quote: Beams and Channels, up to 15-in., 1.70c.; over 15-in., 1.80c.; Angles, 3 x 2 x ¼ in. thick up to 6 x 6 in., 1.70c.; 8 x 8 and 7 x 3½ in., 1.80c.; Zees, 3-in. and larger, 1.70c.; Tees, 3-in. and larger, 1.75c. Under the Steel Bar card Angles, Channels and Tees under 3-in. are 1.60c., base, for Bessemer and Open Hearth, subject to half extras on the Standard Steel Bar card.

Plates.—New tonnage coming into the mills held up remarkably well and none of the leading Plate mills is in position to make deliveries on Universals inside of three to four weeks, while some mills are six weeks behind. On Sheared Plates better deliveries can be made. A good deal of tonnage is yet to come in from the lake boat builders, as the material for a number of boats has not yet been placed. Prices in the main are firm, but occasionally some of the smaller mills shade the narrow sizes of Plates from \$1 to \$2 a ton. We quote: Tank Plates, ¼ in. thick, 6¼ in. up to 100 in. in width, 1.60c., base, at mills, Pittsburgh. Extras over this price are as follows:

	Extra per 100 lb.
Gauges lighter than ¼-in. to and including 3-16-in.	
Plates on thin edge.....	\$0.10
Gauges Nos. 7 and 8.....	.15
Gauge No. 9.....	.25
Plates over 100 to 110 in.....	.05
Plates over 110 to 115 in.....	.10
Plates over 115 to 120 in.....	.15
Plates over 120 to 125 in.....	.25
Plates over 125 to 130 in.....	.50
Plates over 130 in.....	1.00
All sketches (excepting straight taper Plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.).....	.10
Complete Circles.....	.20
Roller and Flange Steel Plates.....	.10
"A. B. M. A." and ordinary Firebox Steel Plates.....	.20
Still Bottom Steel.....	.30
Marine Steel.....	.40
Shell Grade of Steel is abandoned.	

TERMS.—Net cash 30 days. For anticipated payments a maximum discount may be allowed at the rate of 6 per cent. per annum and for a longer time than 30 days interest shall be charged at the same rate per annum. Invoices paid within 10 days from date thereof, discount of ¼ of 1 per cent. is allowable. Pacific Coast base, 1.60c., f.o.b. Pittsburgh, with all rail tariff rate of freight to destination added, no reduction for rectangular shapes 14 in. wide down to 6 in. of Tank, Ship or Bridge quality.

Sheets.—New tonnage on Black and Galvanized Sheets is not as heavy as it was in August, but the mills are crowded with specifications, and shipments are very heavy. Most of the leading Sheet mills are sold up for the rest of this year, and the American Sheet & Tin Plate Company and other leading mills have booked a good deal of tonnage for delivery in first quarter. As yet nothing official has been given out regarding an advance in prices and, as stated last week, higher prices on Sheets depend altogether on whether Sheet Bars for the last quarter will be advanced. The market is very firm and we quote: Nos. 17 to 21, 2.25c.; Nos. 22 to 24, 2.30c.; Nos. 25 and 26, 2.35c.; No. 27, 2.40c.; No. 28, 2.50c.; No. 29, 2.65c., and No. 30, 2.75c. We quote Galvanized Sheets as follows: Nos. 10 and 11, 2.45c.; Nos. 12 and 14, 2.55c.; Nos. 15 and 16, 2.55c.; Nos. 17 to 21, 2.80c.; Nos. 22 and 24, 2.95c.; Nos.

25 and 26, 3.15c.; No. 27, 3.35c.; No. 28, 3.55c.; No. 29, 3.80c., and No. 30, 4.05c. We quote No. 28 Gauge Painted Roofing Sheets at \$1.75 per square, and Galvanized Roofing Sheets, No. 28 gauge, \$3.10 per square for 2-in. corrugations. These prices are for carload lots, jobbers charging the usual advances for small lots from store.

Iron and Steel Bars.—New tonnage in both Iron and Steel Bars is quite heavy, and specifications on contracts are coming in so freely that all the mills are much behind in deliveries. The Republic Iron & Steel Company is maintaining the price of Iron Bars on the basis of 1.60c., Pittsburgh, but some of the independent mills are shading this price about \$1 a ton. We quote Steel Rails at 1.50c., base, half extras, but note that two leading mills are quoting 1.60c. for reasonably prompt shipment.

Hoops and Bands.—New tonnage continues light, but buyers are specifying freely on contracts and shipments by the mills are heavy. We quote Steel Hoops at 1.90c. and Bands for all purposes at 1.50c., base, half extras, as per Standard Steel card. These prices are for carload lots, f.o.b. Pittsburgh, plus full tariff rail rate to point of delivery, an advance of \$2 a ton being charged for less than carloads.

Tin Plate.—The amount of new business being entered by the mills this month is fully as great as in August, which was a record breaker. A very heavy tonnage has been booked by the leading mills for delivery this year, and through the first quarter of next year, but beyond this period the mills refuse to sell, owing to the uncertainty as to prices of Tin Bars in last quarter and first quarter, and also as to prices of Tin. We quote Tin Plate at \$3.75 per base box, f.o.b. Pittsburgh, for 14 x 20 100-lb. Cokes, terms 30 days, less 2 per cent. off for cash in 10 days, on which price a rebate of 5c. a box is allowed for carload and larger lots.

Railroad Spikes.—The demand continues abnormally heavy, and the local concerns making Railroad Spikes have a heavy tonnage on their books, and are sold up for the rest of this year. The demand for Spikes at the present time is being referred to as heavier than ever before in the history of the trade. Prices are firm, and we quote \$2.35 to \$2.40 per 100 lb. For prompt delivery \$2.50 is being paid.

Spelter.—We note a better demand and the market is firmer. We quote prime grades of Western at 5.90c. St. Louis, equal to 6.02½c. Pittsburgh.

Merchant Pipe.—The market continues active and while the new tonnage placed so far this month is not so heavy as in August the mills are filled up for several months. On Line Pipe they are filled for the balance of this year. Prices continue firm, but without change and to mills that have to buy Skelp in the open market are below the cost of rolling it into Pipe. The extreme discount on Merchant sizes of Steel Pipe remains at 81 and 5 per cent. off, to the large trade. Official discounts for carloads, which continue to be shaded one point or more, are as follows:

	Merchant Pipe.			
	Steel.		Iron.	
	Black.	Galv.	Black.	Galv.
½ and ¾ in.....	72	58	60	53
¾ in.....	74	60	71	57
1 in.....	76	64	73	61
¾ to 6 in.....	80	70	77½	67½
7 to 12 in.....	75	60	72½	57
Extra strong, plain ends:				
¾ to ¾ in.....	65	53	62	50
¾ to 4 in.....	72	60	69	57
4½ to 8 in.....	68	56	65	53
Double extra strong, plain ends:				
¾ to 8 in.....	61	50	58	47

Boiler Tubes.—New business in Tubes is rather light, but consumers are specifying freely on contracts placed several months ago. Prices continue to be shaded more or less, depending on the order and sizes. Discounts on carload lots, which are being shaded to some extent, are as follows:

	Boiler Tubes.	
	Iron.	Steel.
1 to 1½ in.....	45	50
1½ to 2¼ in.....	45	62
2¼ in.....	50	64
2½ to 5 in.....	57	70
6 to 18 in.....	45	62

Iron and Steel Scrap.—Buying has been a little freer in the past week and the market is strong. Heavy Steel Melting Scrap from Bessemer stock is held at about \$16.50, while Open Hearth Scrap is very firm at about \$20.50. A local concern that is a frequent seller of Open Hearth stock turned down a firm offer of \$20 recently for considerable tonnage. Dealers quote other grades as follows, per gross ton: No. 1 Wrought Scrap, \$18.25 to \$18.50; Bundled Sheet Scrap, \$14.50 to \$14.75; Cast Iron Borings, \$9.75 to \$10; Wrought Turnings, \$12.25 to \$12.50; Machinery Cast Scrap, \$16; Iron Axles, \$28 to \$28.50; Steel Axles, \$23.50 to \$24.

Coke.—The demand for Coke continues active, best grades of Connellsville Furnace Coke being held at \$2.85, and Foundry at \$3.25 to \$3.50 for Connellsville 72-hour. The

total output of Coke in the Upper and Lower Connellsville regions last week was 387,806 tons, a slight increase over the previous week. A number of leading blast furnace operators are sounding the market on Furnace Coke for delivery in first half of next year, and while no contracts have been definitely closed \$2.75 to \$2.85 at oven is generally quoted. It is expected that some important contracts for Furnace Coke for delivery over first half of next year will be closed in a short time.

The L. A. Green Company has opened offices in Room 807, Keystone Bank Building, Pittsburgh, and will handle new and Relaying Rails, Machinery and Scrap. L. A. Green was formerly connected with the L. K. Hirsch Company, dealer in Iron and Steel Scrap, Frick Building, Pittsburgh.

Cleveland.

CLEVELAND, OHIO, September 18, 1906.

Iron Ore.—The movement of Iron Ore is hampered by a shortage of cars, both in the upper lake region and in the territory adjacent to Lake Erie ports. The shortage is, however, no greater than usual at this season. There has been a good deal of talk of higher lake freights on Ore, but these have not come. The demand for boats in other trades has not been heavy enough to withdraw any material amount of tonnage from the Ore trade, which perhaps accounts for the apparent stability of the lake rates at present. The time when boats will be diverted to other trades is drawing nearer with the heavier movement of grain. The vessel owners are talking 85c. to 90c. on wild Ore, but no change has been made. There is still some talk of Ore sales immediately ahead, but the furnace interests do not seem to be so keen as they were recently. The one check on the buying movement has been the unwillingness of the Ore producers to make sales at any price just now. The wild rates on Ore continue as they have been at 75c. from the head of the lakes to Ohio ports; 70c. from Marquette and 60c. from Escanaba.

Pig Iron.—The buying of Foundry grades is not quite so strong. Prices have ruled about steady, both for immediate delivery and on contracts. The furnaces which have been talking most about higher prices of Foundry for spot shipment have eased a little. There was for a while some Iron being held at \$21, Valley furnace, for No. 2 for delivery during the remainder of this year. These same furnaces are now holding for \$20 for No. 2 for spot shipment. On first half contracts the price is easier also and no one is quoting higher than \$18.50, Valley furnace, for No. 2. This is not due to any change of heart on the part of the furnace interests, but is traceable directly to a lessening of the demand. In Bessemer Iron the market is also a little easier. It would be difficult to get any spot Bessemer or Basic for less than \$18.50, Valley furnace, but some might be sold on contract for 1907 delivery at \$18 to \$18.25.

Coke.—The Coke market is rather stiff just now. Some of the producers are ready to make contracts for first half delivery, but hold at \$4 at oven for the best grades of 72-hour Foundry, which is the price for spot shipment. The best grades of Furnace Coke are selling at \$3 at oven.

Finished Iron and Steel.—The Plate market is a little stronger. There is more difficulty in getting deliveries, despite the increased productive capacity, due in part to the better demand from the lake shipyards. One Detroit shipbuilding company the past week took orders for two new ships for 1908 delivery, and an order for a passenger steamer for 1907 delivery. A firm of vessel owners in Detroit, largely interested in the Toledo Shipbuilding Company, has also placed two orders for bulk cargo carriers with that company. Five ships therefore have been contracted for in the week. In Shapes there is a continuation of the good demand, and some of the buyers having urgent needs now are going into the Eastern markets to purchase their supplies. So far no premiums have been paid on this material. The Billet situation has been extremely strong all this week. The demand cannot be supplied, and prices are being bid up freely. The best grades of Forging Billets are now selling at \$35, at the mill, with a big freight rate added. Some of the mills, endeavoring to ward off business, are quoting \$36, but are still getting orders. The Bar situation is strong, due in part to the shorter supply caused by labor difficulties, and partly by the higher prices being paid for Scrap. The market is about steady on a basis of 1.70c., Pittsburgh. The Sheet situation is also strong, on good demand coming from the smaller consumers. The business out of stock is heavy, with prices steady. The following are dealers' prices to the trade: No. 10 Blue Annealed, 2.15c.; No. 28 One Pass Cold Rolled, 2.80c.; No. 28 Galvanized, 3.80c.

Old Material.—The dealers still have the situation strongly in hand in this territory, and are able to keep prices up against the united wish of the consumers, who are forced to buy liberally on the present basis. Some stocks, held for a long time, are now being worked off at top prices. The

following are dealers' prices to the trade, f.o.b. Cleveland, per gross ton: Old Steel Rails, \$17 to \$18; Old Iron Rails, \$25 to \$26; Iron Car Axles, \$20 to \$21; Heavy Melting Steel, \$17 to \$18. Per net ton: Cast Borings, \$9 to \$10; No. 1 Busheling, \$15; No. 1 Railroad Wrought, \$16.50 to \$17; No. 1 Cast, \$15 to \$15.50; Iron and Steel Turnings and Drillings, \$11 to \$12.

Cincinnati.

FIFTH AND MAIN STS., Sept. 19, 1906.—(By Telegraph.)

Pig Iron.—The market continues strong, although possibly less active than it was a week or two since. Reports do not indicate that any large individual sales have been made the past week, yet taken in the aggregate the tonnage sold has been considerable. It appears as though a large percentage of the heavier consumers are fairly well covered for the remainder of the year, and that the rank and file are now coming forward for early requirements. Yet the larger melters are far from satisfied with the situation, principally on account of the delays incident to receiving shipments already long past due. Everybody is behind in deliveries and buyers are pressing for Iron due on contract. One of the strong features of the situation is that there are no surplus stocks either in furnace or consumers' yards, and both are keyed up to a high pitch to make both ends meet. Spot Iron is strong at \$16, which probably represents as nearly as possible the exact quotation, while for deliveries running into the first quarter of next year \$15 is well established on strictly Birmingham Irons. Northern furnaces are stated to be practically sold up for the remainder of this year, with spot Iron quotable at \$19 at furnace. Business for next year has been taken at \$18, which about represents the market for that delivery. There have been some inquiries for Malleable, but nothing definite as to tonnage and prices. Freight rates from the Hanging Rock District to Cincinnati are \$1.15, and from Birmingham \$3. We quote, f.o.b. Cincinnati, as follows:

Southern Coke, No. 1.....	\$19.50
Southern Coke, No. 2.....	19.00
Southern Coke, No. 3.....	18.50
Southern Coke, No. 4.....	17.75
Southern Coke, No. 1 Soft.....	19.50
Southern Coke, No. 2 Soft.....	19.00
Southern Coke, Gray Forge.....	16.75
Southern Coke, Mottled.....	16.25
Ohio Silvery, No. 1 (8 per cent. Silicon).....	23.15
Lake Superior Coke, No. 1.....	20.65
Lake Superior Coke, No. 2.....	20.15
Lake Superior Coke, No. 3.....	19.40

Car Wheel Irons.

Standard Southern Car Wheel.....	\$25.50 to \$26.00
Lake Superior Car Wheel.....	24.50 to 25.00

Coke.—The market is active. Prices are a little higher, with deliveries fairly satisfactory. We quote the best brands of Foundry Coke, f.o.b. ovens, as follows: Wise County, Virginia, \$3.25 to \$3.50; Connellsville, \$3.50 to \$3.75.

Finished Iron and Steel.—The market continues active and strong. The mills are now said to be in a better position to make prompt deliveries. We quote, f.o.b. Cincinnati, as follows: Iron Bars, in carload lots, 1.63c., with half extras; the same, in smaller lots, 2c., with full extras; Steel Bars, in carload lots, 1.63c., with half extras; the same, in smaller lots, 1.85c., with full extras; Base Angles, 1.83c., in carload lots; Beams and Channels, in carload lots, 1.83c.; Plates, ¼-in. and heavier, 1.73c., in carload lots; in smaller lots, 1.90c.; Sheets, 16 gauge, in carload lots, 2.15c.; in smaller lots, 2.70c.; 14 gauge, in carload lots, 2.05c.; in small lots, 2.60c.; Steel Tire, 1 x ¼ in. or heavier, 1.83c., in carload lots.

Old Material.—The market is firm, with trade good. Consumers are showing more willingness to pay the prices asked for Scrap, and sales have been very satisfactory. We quote dealers' prices, f.o.b. Cincinnati, about as follows: No. 1 Railroad Wrought, \$16 to \$17 net ton; Cast Borings, \$7 to \$8 net ton; Steel Turnings, \$9 to \$9.50 net ton; No. 1 Cast Scrap, \$14.50 to \$15 net ton; Iron Rails, \$20 to \$21 gross ton; Steel Rails, rolling mill lengths, \$16 to \$17 gross ton; Relaying Rails, 56 lb. and upward, \$27 to \$28 gross ton; Iron Axles, \$22 to \$23 net ton; Car Wheels, \$17 to \$18 gross ton; Low Phosphorus Scrap, \$17 to \$18 gross ton.

Birmingham.

BIRMINGHAM, ALA., September 16, 1906.

Pig Iron.—Buying for delivery the first half of next year still continues, but the business now being placed consists almost entirely of orders for small tonnage. The price remains from \$15 to \$16 on a No. 2 Foundry basis, depending largely on the location of the customer and the competition which must be met. A number of sales of spot Iron are reported, but these as a general thing are orders for 100 tons or less and bring almost any price the seller has the nerve to demand. As compared with a few weeks since the market might now be said to be dull, but inasmuch as sufficient sales have been made for delivery the first half of 1907 to place the operators on easy street and make them

indifferent to further business at the present time, it is very probable that existing prices will be the ruling ones for some months. The anxiety over a runaway market has subsided, and the producers express themselves as feeling confident that they now have the situation well in hand. Since the resumption of work by the striking miners the railroads are finding themselves short of coal cars, and much difficulty is being experienced in securing sufficient cars to handle the coal from the mines and coke from the ovens to furnaces. This, together with the shortage of limestone and dolomite for fluxing, is retarding production somewhat. Shipments of Iron are going forward with little interruption, and the railroads just now appear to have all cars needed for this business.

Cast Iron Pipe.—Much pressure is being brought to bear on foundries to hurry deliveries on existing contracts, but owing to unfavorable labor conditions it is impossible to meet the views of the buyers. The large number of contracts for small tonnage which are being placed every week keep the manufacturers from gaining on their orders to any appreciable extent, and all are now booked several months ahead. Quotations remain unchanged and are approximately as follows on Water Pipe, f.o.b. cars here: 4 to 6 in., \$30; 8 to 12 in., \$29; over 12 in., \$27.50, with \$1 per ton extra for Gas Pipe. On large contracts these prices might be slightly shaded, but on small orders a small premium would probably be required.

Old Material.—The conditions prevailing last week are unchanged. Dealers are enjoying an active market and their business on Cast Scrap is only limited by the quantity they are able to secure. The demand for Steel is good and Wrought is selling better than for several months. The large stocks which accumulated on the yards during the summer months have been greatly diminished. No change in price has been made since last week and quotations are about as follows per gross ton, f.o.b. dealers' yards here:

Old Iron Rails.....	\$19.50 to \$20.00
Old Iron Axles.....	18.50 to 19.00
Old Steel Axles.....	16.00 to 17.00
Old Car Wheels.....	16.50 to 17.50
No. 1 Railroad Wrought.....	16.50 to 17.00
No. 2 Railroad Wrought.....	14.50 to 15.00
No. 1 Country Wrought.....	14.50 to 15.00
No. 2 Country Wrought.....	11.50 to 12.00
Wrought Pipe and Flues.....	11.50 to 12.00
Railroad Malleable.....	13.00 to 13.50
No. 1 Steel.....	13.50 to 14.00
No. 1 Machinery Cast.....	13.50 to 14.00
Stove Plate and Light Cast.....	10.00 to 10.25
Cast Borings.....	7.00 to 7.50

New York.

NEW YORK, September 19, 1906.

Pig Iron.—Some round sales for forward delivery have been made, among the buyers being one of the largest melters of this district. A number of large consumers of Foundry, Forge and Basic are in the market with inquiries for forward delivery, but on the whole show a disposition to resist the higher prices asked. There is some complaint on the part of consumers that they are forced to buy spot Iron, because deliveries on old contracts are being delayed. For spot Iron Northern makers are asking \$20.50 to \$21.50 for No. 2, while Southern Iron is selling on the basis of \$20 to \$20.50. So far as we can learn no business has yet been done in foreign Iron for home consumption. What metal has come in and is coming forward is used to fill export orders for finished goods, under the drawback.

Steel Rails.—Inquiries for Rails are again of considerable proportions. Railroads, the financing of whose improvements requires more time than do those of the great trunk lines, generally contribute the second important buying movement in the year preceding that in which the Rails are actually laid. Just now a number of Southwestern lines are negotiating, their probable requirements amounting to about 100,000 tons. In addition there is the 27,000-ton inquiry of the South & Western Railway, with head offices at Bristol, Tenn. Its projected extensions are into the Carolinas. In the past week the chief contract booked was for 15,000 tons for the Minneapolis, St. Paul & Sault Ste. Marie. The Milwaukee Electric Railroad bought 4000 tons, the Chicago & Western Indiana and the Indianapolis, Huntington, Columbus City & Northwestern 1500 tons each, and miscellaneous orders amounted to 6000 tons. Practically all business now going on the books is for next year. Sales are all at \$28 at mill for Standard Sections.

Structural Material.—A significant feature of the recent inquiries coming to the fabricating companies is the number of extensions to manufacturing plants, particularly in Eastern territory. In the manufacturing districts easily reached from New York 8 or 10 such extensions are being figured on, the cost ranging from \$25,000 to \$50,000, and higher. While such plans are not always carried out, the amount of inquiry would indicate that the campaign of expansion in industrial lines is not as near the end as some

statements have indicated. San Francisco work and track elevation at street crossings have been prominent in the contracts of the past week. The American Bridge Company has booked 1200 tons of grade crossing work for the Grand Trunk Railway, 1700 tons for the Indiana Harbor Railroad (a Vanderbilt line in northeastern Illinois) and 1600 tons for the Pennsylvania lines west of Pittsburgh. All this construction is in Chicago. The same company has booked 5000 tons of Steel work for San Francisco, one of the contracts being for the Eyre Building, which will contain retail store-rooms and offices. It will have eight stories, this being the limit under the present ordinance. The award of 14,000 tons for the City Investment Company Building, at Broadway and Cortlandt street, New York, is expected to be made this week. The bulk of the railroad bridge work in contemplation for 1907 is still under consideration by railroad officers, but there is good reason to expect a continuance of the liberal buying on this account that has been seen this year. The Harriman lines have far exceeded the tonnage called for in their original contract for 1906, and may use in 1907 also much more than the 20,000 tons covered by their recent contract. The estimates asked by the Baltimore & Ohio on a new Havre de Grace, Md., bridge across the Susquehanna are regarded as simply a feeler so far, and actual business may be a long time ahead. Deliveries are still not all that could be wished on some sizes, but the mills are generally closer up than was the case early in the summer, and the building trade is approaching a quieter time of year. We quote as follows on mill shipments of Structural Steel, tidewater deliveries: Beams, Channels, Angles and Zees, 1.84½c.; Tees, 1.89½c.; Bulb Angles and Deck Beams, 1.99½c. On Beams 18 to 24 in. the extra is 0.10c., and on Angles over 6 in., 0.10c. Beams and Channels out of stock are sold at 2½c. to 2½c.

Bars.—The excellent demand for Bar Iron continues and prices are firmly held. A meeting of the Eastern manufacturers will take place in this city on Thursday, but it is doubtful that any change in price will be made. The mills which have long been idle by reason of the strike among their workmen are still inactive, and both sides stoutly maintain their positions. The demand for Steel Bars is strong, with considerable difficulty experienced in securing anything like reasonably early shipments. Quite a number of Steel Bar consumers are placing contracts for 500 to 1000 tons or more. Bar Iron is quoted at a minimum of 1.74½c., tidewater, for Best Refined, and Steel Bars at 1.64½c., tidewater.

Plates.—Local sales agents are receiving a fair volume of business, but the orders are almost wholly for small quantities to meet current requirements. While an occasional contract is being placed buyers generally feel that they have no incentive to anticipate the future. The outlook appears to be in favor of the continuance of present prices for an indefinite period. Quotations are as follows at tidewater on mill shipments: Sheared Tank Plates, 1.74½c. to 1.84½c.; Flange Plates, 1.84½c. to 1.94½c.; Marine Plates, 2.14½c. to 2.24½c.; Fire Box Plates, 2.24½c. to 2.60c., according to specifications.

Cast Iron Pipe.—The Department of Water Supply, Gas and Electricity of this city will to-day open bids on 1700 tons and on September 26 on about 1200 tons. These are the largest current public lettings in this territory. Several large buyers, however, notably gas companies, are asking for prices on their requirements for next year. One of these names a quantity running over 2000 tons. Orders now coming in for Pipe cannot be filled until January. It is now expected that the foundries will be kept busy through the entire winter, and it will be remarkable indeed if prices recede from their present level until well into next year. The minimum quotation on 6-in. is \$32 per net ton at tidewater.

Old Material.—While the market is strong and active, its strength is largely due to bids by brokers who are eagerly taking all they can get. Consumers are buying, but in nearly all cases they have their price limits and frequently permit the dealers to outbid them. Quotations for New York and vicinity are approximately as follows per gross ton:

Old Iron Rails.....	\$22.00 to \$22.50
Relaying Rails.....	27.00 to 28.00
Old Steel Rails, rerolling lengths.....	18.00 to 18.50
Old Steel Rails, short pieces.....	16.00 to 16.50
Heavy Melting Steel Scrap.....	16.00 to 16.50
Standard Hammered Iron Car Axles.....	27.00 to 27.50
Old Steel Car Axles.....	20.50 to 21.00
No. 1 Railroad Wrought.....	19.00 to 19.50
Iron Track Scrap.....	17.50 to 18.00
No. 1 Yard Wrought, long.....	17.50 to 18.00
No. 1 Yard Wrought, short.....	16.50 to 17.00
Wrought Pipe.....	13.50 to 14.00
Light Iron.....	9.50 to 10.00
Cast Borings.....	9.75 to 10.25
Wrought Turnings.....	12.50 to 13.00
Old Car Wheels.....	17.75 to 18.25
No. 1 Machinery Cast.....	16.00 to 16.50
Stove Plate.....	12.00 to 12.50
Grate Bars.....	11.50 to 12.00
Malleable Cast.....	15.75 to 16.25

Metal Market.

NEW YORK, September 19, 1906.

Pig Tin.—The long continued dullness in the Pig Tin market is the subject of much comment, although the volume of business during the week has shown some improvement. It is said on good authority that a considerable amount of the selling which has been going on at prices lower than London parity has been done by second hands, and that the market is in a fair way for considerable better improvement, as stocks are now closely held and consumers have little metal in their possession. In support of this theory is the known fact that the metal is going into store rapidly. On the other hand, it is asserted that so much Tin is being produced outside the Straits that the output from that district is less of a factor than formerly. The price in New York dropped from 40.35c., a week ago to 39.65c. on Monday, then reacted and sales were made at 40c. Tuesday. To-day's price is unchanged at 40c. The London market is easier at £184 for spot and £181 10s. for futures, the low price on futures being caused by hedging sales against spot buying. The arrivals so far this month have been large, amounting to 2612 tons, and there are afloat 3135 tons.

Copper.—Further advances in Copper continue to attract the attention of the consuming interest. For prompt deliveries of both Lake and Electrolytic 19.25c. cash has been done, and it is not improbable that sales could be made at quotations considerably above this price if the metal were available. In view of the heavy demand and the known attitude of the holders of Copper, particularly Electrolytic, it is believed that the price will undoubtedly be shortly advanced to 19.50c. cash. As it is some of the larger producers are not selling to dealers or for export, but are taking orders only from consumers, believing that in this way the market can be kept in hand better. Although Electrolytic is relatively scarce, still there is an urgent demand for Lake, of which sales have been made for next year's delivery at 19c. The European markets are very firm, and semi-official figures are to the effect that the consumption of Copper in Germany for the first seven months this year was 68,659 tons. The London market is firmer, spot and futures closing to-day at £88 2s. 6d., with Best Selected held at £93, equivalent to 19.27c., c.i.f. European ports. The exports so far this month are small, amounting to but 7037 tons for the first 18 days.

Pig Lead.—The market is again considerably stronger and Lead in New York is very scarce. The price is considerably mixed, but probably nearby shipments could be had at 6c. to 6.10c., f.o.b. New York. In St. Louis the price is again higher, sales having been made at 5.85c. and some at 5.90c. The demand in that district is extremely heavy. The London market is again slightly firmer at £18 10s. The American Smelting & Refining Company continues its old policy of selling at prices current on date of shipment only. Some improvement has been noticed in the shipping schedule of this company, as now orders are shipped about 15 days after receipt, as compared with 30 days three weeks ago. The price governing outstanding contracts is 5.75c.

Spelter.—After having lagged behind the general market for two months the Spelter market appears to have started out on a road of its own toward higher prices. The reported sale of 3000 tons of Spelter to the Steel Corporation has strengthened the market wonderfully, and unconfirmed rumors that large dealers are buying heavily of the metal for purely speculative purposes also tend to make the market more active. As it is, prices have advanced rapidly and the metal has been sold on a basis of 6.37½c. to 6.40c., f.o.b. New York. In St. Louis the market is quoted as firm at 6.25c. The London market is slightly higher at £27 15s.

Antimony.—A fair demand continues for nearby shipments and the market is very firm, Cookson's being quoted at 25c. to 25.50c.; Hallett's at 24.25c., with other brands held at 22.75c. to 23.50c. There is, however, little inquiry for deliveries into next year.

Aluminum.—The market is firm, and deliveries are considerably belated. We quote No. 1 Ingots at 36c.; No. 2 at 34c. per lb.

Ferroalloys.—There have been more offerings of Ferromanganese, but \$85 seems to be the low price for prompt shipment. For special grades \$90 has been asked. Ferrosilicon is unchanged at \$94.50 to \$95 for 50 per cent. There is a scarcity of 70 per cent. Ferro, but 75 per cent. can be had at \$150 for futures. The above prices are f.o.b. Atlantic seaboard.

Nickel.—Large lots can be had at 45c.; smaller quantities at 55c. to 65c.

Quicksilver.—For flasks of 75 lb. in 100-flask lots the price is unchanged at \$41. In San Francisco domestic orders are held on a basis of \$39 and export orders at \$38.

Tin Plate.—The demand for Bright Plates is exceptionally heavy, and although prices have not been advanced, still there is a well settled opinion that higher prices will shortly

be the rule. For 100-lb. IC Coke Plates we quote \$3.94, f.o.b. New York, and \$3.75, f.o.b. Pittsburgh, subject to the usual trade discount.

Old Metals.—The rapidly advancing prices for raw materials is steadily strengthening quotations for old metals. There is a scarcity in almost all lines. Dealers' selling prices are as follows:

	Cents.
Copper, Heavy Cut and Crucible.....	18.50 to 18.75
Copper, Heavy and Wire.....	18.25 to 18.50
Copper, Light and Bottoms.....	16.50 to 16.75
Brass, Heavy.....	13.00 to 13.25
Brass, Light.....	10.25 to 10.50
Heavy Machine Composition.....	16.75 to 17.00
Clean Brass Turnings.....	11.75 to 12.00
Composition Turnings.....	14.00 to 14.25
Lead, Heavy.....	5.50
Tea Lead.....	5.25
Zinc Scrap.....	4.50

Iron and Industrial Stocks.

NEW YORK, September 19, 1906.

The railroad equipment stocks have been especially strong, largely influenced by the excellent report issued by the American Locomotive Company. Other iron and steel stocks were strong, but made no noteworthy advances. The range of prices on active stocks from Thursday of last week to Tuesday of the present week was as follows: Car & Foundry common, 40½ to 44½; Locomotive common, 71 to 77; Steel Foundries, 45 to 46½; Colorado Fuel, 56½ to 58½; Pressed Steel common, 53½ to 55½; Railway Spring common, 54½ to 58½; Republic common 36¾ to 39, preferred 102½ to 103¾; Sloss-Sheffield common, 76 to 79; Cast Iron Pipe common, 46¾ to 48; Steel common, 45½ to 47½, preferred 106½ to 107½. The feature of the market this morning was the rise in Republic common to 40½. Last transactions up to 1.30 p.m. to-day were made at the following prices: Can common 6¾, preferred 58; Car & Foundry common 43, preferred 101; Locomotive common 75½, preferred 113¾; Steel Foundries common 11, preferred 45; Colorado Fuel 56¾; Pressed Steel common 54½, preferred 98; Railway Spring common 57½; Republic common 38½, preferred 99½; Sloss-Sheffield common 76; Tennessee Coal 159½; United States Cast Iron Pipe common 47½, preferred 91¼; United States Steel common 44¾, preferred 106½.

A call has been made for a special meeting of stockholders of the Tennessee Coal, Iron & Railroad Company at Tracy City, Tenn., October 16, at which the proposition to increase the company's common stock from \$30,000,000 to \$50,000,000 will be voted on. It is stated that the new stock will be for "extensions, improvements and acquisitions." The presumption is general that this new stock will be used in part for the purchase of stock of the Republic Iron & Steel Company and thereby effecting the merger of the two companies which has so long been regarded as likely to take place at any time. The recent rise in Republic common has been attributed to this cause.

Application has been made to the New York Stock Exchange to list \$2,500,000 additional preferred stock and \$5,500,000 additional common stock of the International Steam Pump Company.

The declaration of the full dividend on Lake Superior Corporation 5 per cent. income bonds awakened activity in them, and the price advanced from 58 on Tuesday of last week to 63¼ on Saturday. They had been very inactive for some time.

Dividends.—The Sloss-Sheffield Steel & Iron Company has declared the regular quarterly dividend of 1¼ per cent. on the preferred stock and a semiannual dividend of 2½ per cent. on the common stock.

The American Iron & Steel Mfg. Company has declared a regular quarterly dividend of 1¼ per cent. on the preferred and 2 per cent. on the common stock, both payable October 1.

The Lake Superior Corporation has declared an initial dividend of 5 per cent., payable October 1, on the \$3,000,000 income bonds, out of earnings for the year ending June 30, 1906. This is the full rate of interest per year to which these bonds are entitled. The interest is payable as earned.

The American Locomotive Company has declared a quarterly dividend of 1¼ per cent. on the preferred stock, payable October 22.

The Central Coal & Coke Company has declared a quarterly dividend of 1¼ per cent. on the preferred stock and 1½ per cent. on the common stock, both payable October 15.

The American Nut & Bolt Fastener Company, Pittsburgh, has declared the regular quarterly dividend of 5 per cent., payable September 20.

Directors of the Ashland Coal & Iron Mining Company, Ashland, Ky., have declared a regularly quarterly dividend of 1¼ per cent. and an extra dividend of 2 per cent., payable September 20. This is the second extra dividend this year. The company has been a dividend payer for 40 years, having paid 15 per cent. two years ago. It has \$1,500,000 capital. The company was organized by a number of former prominent Pittsburghers, including William Coleman, William

Nimick and James M. Burleigh, all deceased. Thomas N. Miller, W. H. Nimick of the Keystone National Bank and D. G. Stewart, all of Pittsburgh, are present large holders of the stock. One of the peculiar and profitable features of the company is that it owns about 25 miles of the main track of the Chesapeake & Ohio Railroad, that railroad paying a good rental for the use of the tracks.

Manning, Maxwell and Moore, Incorporated, has declared a quarterly dividend of $1\frac{1}{2}$ per cent., payable October 1.

The International Nickel Company has declared a quarterly dividend of $1\frac{1}{2}$ per cent. on the preferred stock, payable November 2.

American Boiler Manufacturers' Association.

The eighteenth annual convention of the American Boiler Manufacturers' Association of the United States and Canada was called to order in the banquet hall in the Hotel Schenley, Pittsburgh, on Tuesday morning, by President Robert Munroe, Jr. Nearly 150 were present. President Munroe introduced Mayor George W. Guthrie of Pittsburgh, who bade the guests a hearty welcome. He referred to the wonderful advances that Pittsburgh has made in the last 25 years in the manufacture of iron and steel, and dwelt upon the fact that through the efforts of the American Boiler Manufacturers' Association and of the makers of the steel that enters into boilers a higher standard of efficiency had been secured and the trade had been greatly benefited. It was the intention to have Col. Henry P. Bope, vice-president of the Carnegie Steel Company, make an address of welcome on behalf of the Pittsburgh manufacturers, but he was unable to be present, and his place was taken by A. R. Hunt, general superintendent of the Homestead Steel Works. Mr. Hunt made a very happy address and extended a cordial invitation to his hearers to visit the Homestead Works and other plants of the Carnegie Steel Company in the Pittsburgh District. A response to Mr. Hunt's address was made by Col. E. D. Meier of New York City, who paid a high tribute to the manufacturers of Pittsburgh in the quality of the material they were turning out, and said it was by the hearty co-operation of the boiler manufacturers with the steel makers that the boiler trade had been lifted to its present high plane. In closing he said that the boiler manufacturers came to Pittsburgh with the greatest confidence, realizing that its manufacturers were doing all they could to improve steadily the quality of their material and were succeeding. Robert Munroe, Jr., president of the association, then presented his annual address.

At the conclusion of the president's address the convention adjourned temporarily to allow the members and their ladies to have a group photograph taken. On Tuesday afternoon all were conveyed by trolley cars to the foot of Wood street, Pittsburgh, where the steamer Island Queen was boarded to take the visitors up the Monongahela River to give them a view of the almost countless manufacturing plants that line both sides of the stream for nearly 50 miles. The return trip was made after dark to allow the party to see the mills and furnaces lighted up.

The convention met in executive session on Wednesday morning. The principal matters to come before the convention were the report of the Nominating Committee, report of Committee on Time and Place for the Next Meeting and the report of the Committee on Uniform Boiler Specifications. There is every probability that M. F. Cole of the Cole Mfg. Company, Newnan, Ga., will be elected president, and it is practically certain that the place of the next meeting of the association will be Atlanta, as that city is favored by nearly all the members. The report of the Committee on Uniform Boiler Specifications was presented by E. D. Meier of the Heine Safety Boiler Company, New York City. The report was listened to with great attention by the members, and was the important feature of the executive session. After it had been presented it was quite fully discussed. The report, which was submitted by E. D. Meier, chairman; Thomas M. Rees, Richard Hammond, Henry J. Hartley, James Lappan, and George N. Riley, is in part as follows:

"Since our report of July 22, 1905, we met with a committee of the Association of American Steel Manufacturers and agreed on a uniform specification for boiler plate, to be recognized jointly by both bodies. The principal difference of opinion between the members of our committee and those of the committee of the A. A. S. M. was on the percentage of sulphur to be allowed, but a reasonable compromise was finally arrived at, which was published to the A. B. M. A. on December 22, 1905. On January 20, 1906, however, the action of this committee was fully discussed at a meeting of the A. A. S. M. at Pittsburgh and the following resolution passed:

Resolved, That the Association of American Steel Manufacturers agrees with the specifications of the American Boiler Manufacturers' Association as modified at the joint meeting of a committee of the Association of American Steel Manufacturers and the American Boiler Manufacturers' Association in New York on December 15, 1905, and as submitted to the Association of American Steel Manufacturers by E. D. Meier on January 18, 1906, but it is also resolved that the Association of American Steel Manufacturers deems it desirable to still maintain the standard specifications of the A. A. S. M., as revised February 6, 1903, as the basis for the general trade.

"It appears, therefore, that while the steel manufacturers are perfectly willing to uphold the action of their committee so far as the agreement with our association is concerned they hesitate to make this action applicable to the general trade. This again emphasizes the fact that in matters of improvement of boiler manufacturing the A. B. M. A. stands in the lead, and we have to allow for the gradual education of the outside boiler manufacturers to come up to the standard established by us. In discussing this matter with the committee of the A. A. S. M. I presented 500 tests of actual specimens of A. B. M. A. steel, which showed the following remarkable results:

"Phosphorus, high, thirty-one thousandths; low, seven thousandths. Number above A. B. M. A., specifications, 1.

"Sulphur, high, thirty-six thousandths; low, thirteen thousandths. Number above A. B. M. A., specifications, 226.

"On February 1, 1906, the committee of the A. A. S. M. held a meeting in Washington, at which I was present by special invitation, representing the A. B. M. A. After some discussion among ourselves, we called on the Board of Supervising Inspectors, and the subject of boiler materials was thoroughly discussed before them, and many of the points made received favorable consideration, and were afterward embodied in the revised rules of the Board of Supervising Inspectors. The American Society for Testing Materials continues to show a strong friendly interest in our work, and on their invitation I reported to them in the matter of boiler materials on June 15, 1906.

"I paid several visits to Herbert Knox Smith, Deputy Commissioner of the Bureau of Corporations, Department of Commerce and Labor, in Washington, the last one on September 11, 1906. He assured me that the department had concluded that it would be impossible to pass such a bill as the one introduced in the last session of Congress, practically on the lines recommended by our committee. The officials of the department have finally given up hope of passing any general bill. On the other hand, he has taken up individual sections and succeeded in having some important amendments made. He recommends that we draw up amendments to such sections as have become obsolete or burdensome, and that the department will gladly take up the matter with us and adopt measures for relief. He referred notably to the question of the value of different rivet joints and would aid in recommending that the section referring to them and double riveted and triple riveted butt seams be recognized by law.

"Since our own efforts and those of the department have shown the futility of again attempting revision through Congress, the road suggested by Commissioner Smith is open to us and I believe can be followed to advantage. Let us discuss in our conference the changes made necessary by modern conditions by the various sections which are now or may hereafter become burdensome or antiquated. Let us confine ourselves to a few sections at a time."

The Machinery Trade.

NEW YORK, September 19, 1906.

The feature of the week in the machinery trade has been the receipt of very extensive specifications for the machinery equipment for the Imperial Steel Works of Japan. These specifications cover a great variety of machinery and are said to be among the largest sent out for bids in a long time. During the past few months the steel interests have been large buyers of machinery, and it is understood that the United States Steel Corporation is preparing to purchase large quantities of mining machinery. The railroads have lately come into the market in a large way, two of the most important lists having been closed and one is about being arranged for, the power plant equipment being purchased this week. The receipt of additional orders for such large amounts of machinery have extended deliveries farther into the future, and one of the largest houses states that orders for many of its machines now on the books cannot be filled until next fall. Some of the more important machinery manufacturers are increasing their capacity in an endeavor to fill their orders.

Numerous inquiries in the trade from Japan indicate that that country is about to enter upon a buying movement which may only be preceded by the great industrial action in that country just before the war with Russia. Inquiries now before the trade denote that about every branch of manufacturing in Japan is developing rapidly, and according to leading Japanese firms who act between manufacturers of this country and purchasers in Japan, there never before has been such a demand for general machinery. While the requirements from Japan just before the war may have been larger along certain lines, there is no doubt that general machinery requirements of the present time are much more extensive than they were then. The inquiries before the market are not speculative by any means, as the firms who have put them out declare that they have been commissioned to buy the goods listed and there can be no doubt that within the next few months the buying from Japan will be the principal feature of the foreign trade.

Machinery men will take interest in the report submitted to the United States Government by special agent Charles H. Pepper, who was sent to Egypt to investigate the prospects for increased trade with that country. He declares that there is a wide demand in Egypt for machinery, and dealers in Alexandria and Cairo assert that manufacturers in the United States offer no encouragement for the introduction and sale of their goods. There is no complaint, Mr. Pepper's report states, that American machinery is not equal in quality to that of England. He declares that there ought to be a good field for American manufacturers in general machinery and especially in agricultural machinery, of which \$637,000 worth was imported during the first six months of this year, nearly doubling the amount for the same period of last year. Mr. Pepper states that electric lighting and the use of electricity in other ways opens the demand for material in that line. The demand for automobiles and motor cars in general is an increasing one these days, and his report urges manufacturers in this country to make more strenuous efforts toward securing the trade. As an indication of the machinery needs of the country it may be stated that it is proposed to raise the Assouan dam 20 ft. in height, at an estimated cost of \$2,500,000, and the Government has in hand comprehensive plans for the storage and distribution of the water in Middle and in Upper Egypt, and for drainage in the Delta. There is no preferential tax in Egypt and the treaties in commerce which have the favored nation clause do not affect the customs schedules. The majority of the articles from all countries have a uniform duty of 8 per cent. ad valorem. This uniform treatment of all nations, Mr. Pepper's report states, should make it comparatively easy for Americans to compete for the trade, but in consideration of the fact that an English combine now controls most of the Egyptian steamship trade, a direct line from this country to Egypt would be advantageous.

National Supply and Machinery Dealers' Detroit Meeting.

The indications are that the special meeting of the National Supply and Machinery Dealers' Association, to be held next Wednesday and following days at the Hotel Cadillac, Detroit, Mich., will be well attended by the machinery dealers, as it is understood the meeting is to be especially for the members of the association engaged in the machinery trade, and that important questions have come up that will be to the advantage of the machinery dealers to have settled before the October meetings of the National Machine Tool Builders' Association.

Three papers are to be presented at the meeting, as follows: "The Increased Cost of Selling Machinery and the Interest of the Manufacturer in a Liberal Policy Toward the Dealer," by Henry Prentiss of the Prentiss Tool & Supply Company, New York; "Exclusive Sales Territory and Protection Therein," by F. H. Brown of the Brown & Zortman Machinery Company, Pittsburgh, Pa.; "What Can the Manufacturer Do to Aid the Dealer in Distributing His Product?" by C. A. Clarke of Hill, Clarke & Co., Boston, Mass. Following the reading of the papers the subjects will be generally discussed.

On Monday and Tuesday preceding the meeting of the association the Executive Committee will hold several sessions, some of them jointly with the Executive Committees of the American Supply and Machinery Manufacturers' Association and the Southern Supply and Machinery Dealers' Association. These joint meetings of the Executive Committees of the dealers' associations and the manufacturers' association will be of considerable importance, in view of the fact that should it be decided to hold the next annual conventions of the three organizations at the same time and place a long step will have been taken in bringing into closer harmony the relations of the manufacturers of machinery supplies and the dealers handling their products throughout the entire country. It will be recalled that last spring the Southern Supply and Machinery Dealers' Association and the American Supply & Machinery Manufacturers' Association met jointly at St. Louis. This was highly successful in promoting the objects of both associations, and whenever important questions of mutual interest arose at either of the conventions, instead of being summarily disposed of, perhaps to the detriment of the other associations, they were discussed in joint session and finally adjusted to the satisfaction of all. While the conditions in marketing supplies in the South may be quite different from those prevailing in other sections of the country, there are many questions which come before both dealers' associations which are intrinsically of the same moment to both, inasmuch as that they concern the adoption of certain policies by the manufacturer. It would obviously be desirable that these matters could be discussed by all of the parties concerned at one time and place, and thereby establish rules which would concern the manufacture and selling of supplies throughout the entire country on a basis desirable to all manufacturers and merchants. This is doubtless what will be attained through the agency of the Detroit meetings.

The accomplishment of this object might even lead to bringing into this alliance the National Machine Tool Builders' Association, which if it held its annual meeting simultaneously with those of the machinery and supply dealers, would find it convenient to adjust any differences that might occur between its members and the merchants who sell their products in the large industrial centers, as practically every one of them belong to either the National or the Southern Supply and Machinery Dealers' Association.

The Niles-Bement-Pond Company, New York, announces that it has advanced prices 5 per cent. on its entire line of machine tools.

Manufacturers of chucks increased prices from 5 to 10 per cent. on September 11.

Large Japanese Inquiries for Machinery.

Probably the most important list of requirements to come before the trade this week was that distributed among several large houses by an important Japanese firm, which frequently acts as a purchasing agent for the Japanese Government. The list embraces an extensive lot of requirements for the Imperial Steel Works of Japan, which is making some important enlargements to its plant. From the schedule of requirements submitted to the trade it is gathered that the Government intends adding a bar mill and tube mill to its holdings. Listed among the requirements are a blooming mill, rolling tables, furnaces, cranes and about every sort of equipment that goes to make up a first-class plant of the kind mentioned above. The list of minor equipment for the proposed plant was an extensive one, which will call for an outlay of large amounts of money, and it is possible that if the contract is placed in bulk in this country the fortunate bidder will need considerable in the way of machinery equipment to complete the contract. The only thing that might bar American manufacturers from figuring on the equipment of the proposed addition will be the matter of delivery. It is understood that the same specifications have been given to European firms, and while it is well understood that Japanese engineers greatly favor American machinery, and especially that used in the iron and steel producing industries, it is possible that American manufacturers will require too long a time to fill the orders. While the Americans have the advantage of being favored, inasmuch as their machinery is conceded to be the most serviceable, it is thought that the Europeans can give better terms as to deliveries and that feature may result in the contracts involved going abroad.

The machinery trade will do well to watch the leading Japanese purchasing firms in this city for some time to come, judging from the inquiries sent out by these com-

panies. It is known among some in the trade that there are a large number of inquiries for general machinery here from Japan. The Japanese buyers are getting about everything in the way of machinery, and they have a number of industrial plants to equip within the next few months. More particularly, however, they are buying a large amount of electrical machinery and machinery for water works. The Japanese are also buying a great deal of machinery just now to electrify street railways, and a large number of their industries call for equipment for that class of work, and especially in the power line. Independent of inquiries sent out by the big Japanese buyers here there are numerous inquiries in the market from private concerns who desire to buy direct from this country, and taken altogether the list of requirements for Japan show that there will be much buying from that country for many months to come.

The United States Steel Corporation is now preparing its list of requirements for mining machinery, and it is known that the company intends to spend several million dollars for surface and underground equipment within the year. The company is straining every effort to increase its mining operations in the Lake Superior region, and consequently a large amount of machinery equipment will be needed to carry out its plans. The list of requirements is being prepared in a preliminary way, and for some time past there have been some inquiries in the market along those lines, but nothing that would indicate the strong buying movement that the company contemplates. While the company proposes to set aside several million dollars for the purchase of such equipment as is needed in the mining regions, it is hardly thought that all of the buying will be done within a year. Although the mining machinery trade is hardly as crowded as the machine tool line and other branches of the machinery trade, it is known that at least a number of important firms manufacturing mining machinery have about all they can do for the present. As the company intends doing a great deal of buying the purchasing will necessarily extend over quite a period.

The Bethlehem Steel Company is still buying equipment for its proposed structural mill, and it is possible that some of the many requirements recently placed before the trade include equipment for some of its other departments. The company is getting bids on a 34-in. blooming mill just now, and it is understood that the buying is being done from New York. This will by no means complete the requirements for the new structural steel plant that the company intends erecting, and from the numerous inquiries in the market for equipment it is thought that the Bethlehem people are arranging to follow out their plans toward extending their other works to a considerable extent.

Railroads Buying Heavily.

The Cananea, Yaqui River & Pacific Railroad, an extension of the Harriman lines into Mexico, has about completed plans and specifications for its terminals to be located at Empalme, Sonora, Mexico, this point being located a short distance from the port of Guaymas. The terminal will include an up to date machine shop, erecting shop and roundhouse, which will be constructed with the view of handling from 5 to 10 engines per day for light and heavy repairs. The company is now in the market for the complete equipment for the shops, including two to four planers, eight engine lathes, one engine wheel lathe, drills, trip hammers and all the other necessary machinery for equipping a complete plant. It is the intention to install practically all motor driven machinery. Charles E. Walker, whose headquarters are at Tucson, Ariz., is secretary, treasurer and purchasing agent.

Considerable attention is being given this week by the trade to the Baltimore & Ohio Railroad, which is now making purchases against its large list of machine tools and power plant equipment which was printed in detail in *The Iron Age* of June 21. These specifications constituted the machine tool programme for 1906 and covered tools of the heaviest type. The purchases now being made are for the power plant equipment, and it is understood that the purchase of the machine tools will follow shortly if they are not made at the same time as orders are placed for the power machinery. This machinery is required for renewal at the various shops along the line, but it is thought that considerable of it will go into the new shops which the company recently built at Philadelphia.

The large list of machinery issued some time ago by the New York, New Haven & Hartford Railroad for equipping its new Readville shops has about been provided for. This list was very extensive and attracted a great deal of interest in the trade. It is understood that one of the largest houses in New York secured a greater portion of the orders. Considerable interest is attached to the plans of this railroad not only because of this large list which has just been closed, but in view of the fact that the railroad is understood to be contemplating the erection of new shops, nearly if not quite as large as the Readville shops, somewhere on the western part of its system. If the company goes ahead with the erection of these shops another complete equipment as large as that just closed will probably be required.

The \$75,000 list of machine tools sent out last May by the Southern Railroad has been closed. This list covered about 100 tools, many of them of the heavier type, and it is understood that the orders were pretty well scattered. The tools were mostly to be motor driven, and many of them, it is understood, are to be installed in the Lonsdale shops, where the company has recently erected new buildings.

New Palace Car Plant.

The trade will probably soon hear from the American Palace Car Company, 27 William street, New York, which is now looking for a site to erect a large plant for the construction of its cars. At present the company is having its cars made by outside parties, but according to a statement made by George A. Denham, the president, the company will be compelled to establish its own plant, principally because the various car building plants where it has been having its work done are so crowded with orders that it is impossible for the company to get its requirements filled promptly. The company has for some time been looking about for a location for its proposed plant, and several cities between Buffalo and Philadelphia have offered inducements. The company has also received some overtures from Western municipalities, and while it was originally intended to locate the proposed plant in the East it is possible that it may be built in the West because of extra strong inducements offered. The car company has \$2,000,000 worth of business in sight in the way of inquiries and orders, and it is stated that it will be impossible to fill them within a reasonable time unless something is done toward manufacturing them itself. It is estimated that at first a plant to cost in the neighborhood of \$1,000,000 will be built and later on it will be extended. The company makes wooden palace cars of a new and improved type. In this connection it is of interest to note that the scarcity of freight cars will give an added impetus to the manufacture of steel freight cars, according to a machinery man who sells a good deal of equipment to railroad car plants. The party in question is authority for the statement that never before has there been so much building going on in the way of railroad shops, and most of its efforts are being directed toward the car building and repair departments. The car companies are also enlarging to a considerable extent to compete with the strong demand, and the trade may expect in the very near future to hear of a number of enterprises along these lines.

The Ramapo Iron Works, Hillburn, N. Y., is preparing to erect a Canadian plant to manufacture its railroad cars and railroad appliances, such as switches and frogs, switch stands, freight cars and steel trucks. The company has quite an extensive plant at Hillburn, but it has been unable to take care of its largely increasing business and has been obliged to make arrangements for a separate plant to manufacture for its Canadian customers. A plot of land has been purchased in the township of Stamford, just outside of the city of Niagara Falls, Ont., and arrangements have been begun to build there. The tract of land is 3 acres in size and the company proposes to erect, it is understood, a structure 50 x 240 ft. This will be used as a general manufacturing plant, and it is thought that a large part of it will be given over to the manufacture of freight cars and car trucks. While the plans only call for the one building at present, it is the company's intention to enlarge later on, and it is expected it will not be long before another addition is made to the company's holdings there. The details regarding the amount of power to be installed have not been given out as yet, but it is thought that the company will come into the market very soon with a list of equipment for the new plant.

The Marion Dump Wagon Company, Marion, Ohio, is in the market for a second-hand radial drill and a small hand power shear.

The Niles-Bement-Pond Company, New York, is building an addition to its Pratt & Whitney shops at Hartford, Conn., which is to be used as a machine shop and which will double the capacity of that department. The company is receiving each month orders for more machinery than it can produce in its various plants, and deliveries are constantly being extended. On many of its machines the company cannot make delivery until next fall. This large business has been made up principally of medium sized orders and clearly illustrates the enormous demand from all sources for machine tools. The company has advanced prices 5 per cent. on its entire line of tools.

It has been decided to construct a \$12,000,000 filtration plant at the Jerome Park reservoir, New York. The water will be filtered through sand and the capacity will be about 380,000,000 gal. daily. It is expected that the contract for the work will be let by the end of the year.

Louis Block has opened a consulting engineering office at 45 East Forty-second street, New York. Mr. Block has been connected with the De La Vergne Machinery Company for more than 24 years, of which 20 years were passed as head of its engineering department. His specialties will be refrigeration, ice making and oil and gas engine installations.

He desires to receive catalogues in those lines and for pumps, air compressors, engines of all kinds, boilers, steam heating and ventilating and surface condensers.

Chicago Machinery Market.

CHICAGO, ILL., September 18, 1906.

During the past week the Chicago, Milwaukee & St. Paul Railroad awarded contracts aggregating \$60,000 for machinery and equipment for installation in its Milwaukee shops. Its car shops have been added to during the year and their present capacity is 20 cars a day. A new wheel foundry has also been completed, with a daily output of 600 wheels, and the equipment just purchased will be distributed among the various departments of the shops. Another appropriation was recently made for the purchase of additional tools, but the specifications have not yet reached the purchasing agent. Nearly all of the equipment for the new shops of the Missouri, Kansas & Texas Railroad has already been bought, the purchases having been made at the company's St. Louis headquarters. Much of the equipment recently contracted for by Western roads will not be delivered until early in 1907, although many of the smaller tools will be shipped in November and December. On milling machines builders in this section are hopelessly swamped with orders, two being unable to make deliveries before April. The few tools that are carried in stock by local dealers are held at a premium, and advanced prices are asked on all lines of desirable machines for quick shipment from floors on Machinery Row. Second-hand tools if in good condition command the price of new ones, and no relief from existing conditions is anticipated until the manufacturers catch up on their back orders.

Another large addition to the plant of the Prescott Company, manufacturer of sawmill machinery, Menominee, Mich., will be commenced at once. This building will be of steel and brick construction, and will contain a 5-ton open hearth furnace. The order for this furnace, with the necessary equipment for operating it, has been placed with the Wellman-Seaver-Morgan Company, Cleveland, Ohio. The new structure will have 14,400 sq. ft. of floor space, and will be utilized for the manufacture of iron and steel castings. The steel framework for the building will be furnished by the Worden-Allen Company, Milwaukee, Wis. The company is in the market for the following equipment for this addition: 10-ton electric traveling crane, 60-ft. span; cold saws, sand blast machines, ladles and general foundry supplies. The power facilities of the present plant are sufficient to meet the needs of the new building. The capacity of the company's steel plant will approximate 10 tons per day, and the capacity of the entire foundry will approximate 25 tons of both iron and steel castings.

The American Seeding Machine Company, Springfield, Ohio, will let contracts in about 30 days for the construction of a large addition to its Richmond, Ind., plant, the estimated cost of which will be \$100,000. No plans have yet been formulated as to the equipment requirements of the building, although such equipment will be needed as boilers, motors, woodworking and ironworking machinery. The matter of equipment will probably not be considered until the buildings are well under way.

The Armstrong Brothers Tool Company, Chicago, reports that business during the summer months occupied the plant at its extreme capacity to keep abreast of orders, and the equipment of the plant with additional machinery has been necessary to accumulate some stock ahead. September business shows no falling off in volume of either the domestic or foreign trade, and dealers are evidently anticipating a continued heavy demand and delayed shipments. Among other orders for cutting-off and grinding machines the following have been booked by the company: Schuchardt & Schutte, Vienna, four machines; Manning, Maxwell & Moore, New York, three machines; Manning, Maxwell & Moore, Chicago, one machine.

The E. A. Delano Company, engineer and machinist, Chicago, whose premises at 50 to 56 South Clinton street were recently destroyed by fire, has removed to a new factory at 150-156 East Huron street, which is being equipped as a model machine shop for the manufacture of power transmission and pulley molding machinery, as well as for general machine work. The new building will afford larger and better facilities than were possible in the old quarters.

The Parry Mfg. Company, Indianapolis, Ind., manufacturer of light vehicles, which purchased the automobile department of the Standard Wheel Company about a year ago, has been perfecting the machine and will very considerably increase the capacity of this department.

The Reinke & Shirray Mfg. Company, Detroit, Mich., operating a novelty and pattern works, announces the removal to its new factory at 445-453 Lafayette boulevard.

New England Machinery Market.

WORCESTER, MASS., September 18, 1906.

An advance of 5 per cent. has been made by some of the engine lathe builders, and it is expected that the increase will have become general within a short time, if it is not so already. Western manufacturers made announcement of the advance several days ago and some of the New England lathe builders have done likewise.

The advance of 5 per cent. on 24 in. planers and by a number of manufacturers on some other sizes has extended through the trade since last week, though there are still exceptions to the new prices.

There appears to be a good deal of misapprehension among buyers of machine tools as to the reasons for recent advances in prices. There are other elements than recent high prices of labor and materials which enter into the increased costs of to-day as compared to those of the comparatively recent past, made necessary by the advent of the new steels, and by the demand for machines to accomplish more accurate as well as more rapid work. These new conditions mean greater strength of machine tools and improved shop equipment for their builders. Tool steel has been replaced by high carbon steel, more expensive in itself and in its working. Cast iron has been replaced in part by steel castings and forgings. Composition bearings and roller and ball bearings have been adopted in reducing the friction which stood in the way of higher speeds and much more accurate work has been produced, largely for the same reason. Everything in most machine tools has been made heavier. Their builders have been to great expense in improving the equipment of their works in order to meet new requirements of their product. These are only a part of the new conditions which affect the trade and add to the costs of machinery. No one can state in full knowledge of the machine tool business that prices are too high, although they are considerably above what they were a year ago.

The New England foundries have advanced prices on iron castings one-eighth of a cent a pound, the reason being the increase in cost of pig iron.

The annual meeting of the National Machine Tool Builders' Association will be held in New York October 9 and 10, place to be announced later. The decision to hold the meeting a week later, as stated in last week's report, was changed when the sentiments of more of the members had been ascertained, and after some telegraphic exchange of views it was decided by President Woodward and Secretary Montanus that October 9 at 10 a.m. will be the hour for calling the meeting to order.

The Waterbury Clock Company, Waterbury, Conn., is contemplating the erection of a large addition to its works for its case department. Plans are not perfected, but the building will be 43 x 500 ft., part of its length at right angles to the street, and will be five stories. The plans call for a new power plant eventually. Building will not begin before next year.

The Maine Central Railroad is to begin work immediately upon an addition to its car repair shop at Waterville, Maine, the building to be 39 x 362 ft. It is not planned to install machinery in the new part for the present nor to increase the number of men employed, but rather to afford more room for those already engaged in the work. A large extension of the paint shop of the Waterville plant is already under construction.

Robertson & Bennett, Keene, N. H., are erecting a large garage, which will include a shop in which lathes and other machine tools will be installed. Electric power will be employed.

The Eastern Machine & Stamping Company, Providence, R. I., has been incorporated, with a capital stock of \$30,000, to manufacture tin cans and pails for a wide variety of purposes. The company has taken the factory on Wickenden street formerly occupied by the Household Sewing Machine Company, 19,000 sq. ft. of floor space having been leased. The plant is being equipped as rapidly as possible. The officers of the company are: President, Charles Sisson; vice-president, J. Vinton Dart, and secretary and treasurer, J. Burtis White.

The town of Wallingford, Conn., has appropriated \$8500 for the purchase of an additional water wheel, generators and other appliances for the increase of the town electric lighting plant.

Hill, Clarke & Co., Boston and Chicago, have purchased the entire machine tool equipment of the Pennsylvania Iron Works Company, Philadelphia, Pa., said to approximate \$50,000 in value. The lot consists of heavy lathes, planers, boring mills and milling machines, and includes a planer 10 ft. square, Bement lathe 30 ft. long, also 16-ft. boring mill. Some of the tools are comparatively new and will be offered in lots to suit.

The Universal Machine Screw Company, Hartford, Conn., manufacturer of machine screws and multisplindle screw machines, has extended its line of machines by adding two sizes. The original machine had a capacity of

$\frac{3}{4}$ in., while the new sizes have capacities of $\frac{3}{4}$ and $1\frac{1}{4}$ in. respectively. The design of the machine has been changed by the elimination of the belt operating the die, change gears having been substituted to permit of getting any desired speed.

The E. Stebbins Mfg. Company, Springfield, Mass., manufacturer of brass goods, is to build an addition to its brass foundry, 54 x 84 ft. and one story.

Philadelphia Machinery Market.

PHILADELPHIA, PA., September 18, 1906.

While there has been no great rush of business in the local machinery market the past week the aggregate number of orders booked by both manufacturers and dealers was fairly good. The larger proportion of the business taken was for single tools, and confined mostly to tools of the medium and lighter classes. Propositions covering any extended equipment are few, and outside of one or two local concerns who will shortly get out lists—mention of which has been previously made—there appears to be no business of this nature in sight for early closing. Some good business is looked forward to from several of the Southern railroad companies, both for new shop equipment and for general use in their various shops. Several orders have been placed, it is understood, by the Western Maryland Railroad for additional tools for its Ridgeley and Elkins, W. Va., shops, and although some little of the business was placed here, the bulk of it went to the Baltimore merchants. Some further business, in the shape of additional tools for its other shops, is expected from this road before a great while.

Manufacturers of machinery and tools of all descriptions continue fully occupied, the volume of business coming in averages about the normal capacity of their plants, and in some cases has largely exceeded it, making any improvement in deliveries a practical impossibility. This condition interferes materially with the quick sale of many tools. If it were possible to obtain reasonable deliveries there is no doubt that there would be less difficulty in closing up pending business and sales would be correspondingly larger, but if such were the case manufacturers with their present plant capacity would be unable to take care of the business. The extension of manufacturing plants to meet this demand has had the serious consideration of many machine tool builders, but in view of previous experiences there is some hesitancy displayed in taking the necessary action. While this lessens the demand to a certain extent for more or less extensive equipment, the wear and tear upon tools and machinery to meet a demand beyond their capacity means an earlier necessity for their replacement, and while the business from this source individually is not great it makes a large total in the aggregate, counteracting to a certain extent the lack of specifications for the more elaborate equipments.

Foreign demand for tools of a special character continues fairly good. Inquiries are reported in greater volume, and several satisfactory orders have been taken. There is little change in the export situation regarding the standard line of machine tools, manufacturers of which have as much domestic business on hand as they can well take care of, and but little attention is paid to the export trade. Those transacting a more or less regular trade abroad in established lines of shop specialties and power transmission machinery report business about equal to the average at this season of the year.

The demand for second-hand machine tools is quite active. Delayed deliveries of new tools have forced buyers who need tools for immediate use into this market, and some good round lots are being purchased. In some lines it is difficult to find just the sizes and kinds of tools wanted, as the dealers have had more or less difficulty in keeping their lines full, owing to the extensive buying in this field.

Boilers and engines, both new and second-hand, have been in more active demand, and less difficulty is experienced on the part of sellers in closing up pending business. There is probably more activity in equipment of the medium horsepower. Some good business, however, is said to be in sight for high power equipment, but this as a general rule moves rather slowly.

Iron and steel casting plants continue fully occupied, and with the tonnage being offered are likely to so continue for some time. Steel casting plants are easier than ever and contracts for next year's delivery are in some cases being made. In a number of the casting plants the productive capacities for the remainder of this year are fully taken. Gray iron plants are busier than ever; a large amount of work is being offered and foundries are running at their full capacity in order to take care of the work already in hand.

The Treen Box Mfg. Company will build an addition, 80 x 80 ft., two stories, to its plant at Tioga and Memphis streets, in this city. This when in operation will double the capacity of the plant. This company is now in the market

for a 125-hp. boiler and a 100-hp. engine of the Corliss type, and will be in the market about January 1, 1907, for a considerable amount of woodworking machinery for the equipment of its new addition.

The Philadelphia & West Chester Traction Company is asking for bids on a new car barn and shop, to be located at Llanerch, Pa. The new building will measure approximately 100 x 216 ft., and is to be built of brick and concrete, with reinforced concrete roof. An electric crane and other equipment will be required, but what this will be has not yet been decided. Bids for the erection of the buildings are due September 27.

The City of Philadelphia, through the Department of Public Works, has awarded contracts valued at half a million dollars for work to be done on the Torresdale Filtration system. These included awards to John McMenamy, Stuart Wood and the United States Cast Iron Pipe & Foundry Company for the completion of certain pipe lines, and for valves to the Roe-Stevens Mfg. Company. The contract for the completion of the water intake at Torresdale was awarded to Richard D. Bennis. All of these contracts were originally held by D. J. McNichol & Co., but were annulled by the city early last year.

The Vandyke-Churchill Company, in the Bourse Machinery Hall, has secured the exclusive agency for the Eastern territory for the line of punches and shears manufactured by the New Doty Mfg. Company, Janesville, Wis., as well as the exclusive agency for the Blaisdell lathes, manufactured by Whitcomb-Blaisdell Machine Tool Company, Worcester, Mass., covering the same territory. The Vandyke-Churchill Company reports business in a satisfactory condition. The demand for all classes of machinery has been good, although mostly for single tools. Higley cold saws have been in exceptional demand and large sales of these tools have been made.

The E. H. Mumford Company notes a good demand for all classes of foundry molding machines and particularly those of the plain power ramming type, of which a large number have been sold. Orders have also been taken for two split pattern machines for export to Switzerland, while Rathbone multiple molding machines with 14 x 16 flasks have been furnished both iron and steel casting plants and are meeting with great success. There is also a good demand for the Prince conoidal sand mixer manufactured by this concern. Molding machines of different types have been furnished a number of iron, steel and brass foundries, both local and out of town, and from the amount of business in sight trade conditions during the fall months are considered to be most favorable.

The R. S. Newbold & Son Company, Norristown, Pa., has been exceptionally busy. All departments have as much work as they can handle, and the company's order book is still well filled and enough work is on hand to keep the plant fully occupied for months ahead. Some of the recent deliveries by this company include boiler stack $11\frac{1}{2}$ ft. in diameter by 125 ft. high, and another boiler of 175 hp. to the power plant of James Lees & Sons Company, Bridgeport, Pa., and it has just finished the erection of some large boiler flues for the J. A. Roebling's Sons Company, Kinkora, N. J. A number of new tilting tables have been furnished the Central Iron & Steel Company, Harrisburg, Pa., and orders are in hand for heavy conveying tables for the National Tube Company, spacing tables for the Lukens Iron & Steel Company, a 120-in. straightening machine for the Central Iron & Steel Company, a punching machine for export to Brazil, and a complete three-high 20-in. mill, squeezer and furnace plates for the Longmead Iron Company, Conshohocken, Pa.

The Energy Elevator Company has received a large number of orders recently from both the local and out of the city trade, and every department of its plant is fully occupied. The demand covers this company's full line of elevators, including orders for several electric freight elevators for local concerns; a power freight elevator for parties in Derby Line, Vt., and a large number of hand power carriage and freight lifts for concerns in all parts of the country. A hand power passenger elevator has been furnished a customer in Calvin, Ill., while a hand power freight elevator is being installed in the Eastern penitentiary in this city.

Cincinnati Machinery Market.

CINCINNATI, OHIO, September 18, 1906.

Sealed proposals will be received by the Board of Managers of the Ohio State Reformatory at Mansfield, Ohio, until Thursday, October 18, for furnishing the material required in the construction of 42 steel cells, more or less, as may be required in the east cell wing of the Ohio State Reformatory. Specifications and descriptions are on file in the office of Henry Heer, mechanical engineer, Mansfield, Ohio.

G. M. Horton, who for the past six years has been purchasing agent for the American Tool Works Company, will on October 1 become general manager of the combined Victor

Stamping Company and the Cincinnati Screw & Tap Company, near Epworth Heights, Ohio. He will be succeeded by J. G. Hey, who has been connected with the American Tool Works Company for a number of years.

The directors of the Steel Foundry Company at Winton Place are discussing the advisability of increasing the stock from \$100,000 to \$200,000, the additional amount received to be spent for betterments and increased facilities.

The third quarterly dinner of the Cincinnati branch of the National Metal Trades Association was held at the Café Rialto, on the second floor of the Fall Festival Exhibit, last Thursday evening. About 100 manufacturers of the city and suburbs were present.

It is generally regarded that the sale of the machine tools of the Shaw Machine Company, Lowell, Mass., late in July, has had its effect upon the business of the machine tool manufacturers, including the milling machine people, and doubtless the extraordinarily high prices paid for milling machines sold under the hammer had an influence upon the recent advance of 5 per cent. on that class of tool. It will be remembered that at the auction the Cincinnati milling machines brought prices far above the present market price, which is considerably higher than it was when the machines were purchased a year ago. Two No. 4 plain machines, listed at \$1000 each, sold for \$1010 and \$1225 respectively; a No. 5 plain machine, listed at \$1350, brought \$1475; a No. 3 universal, listed at \$1050, brought \$1350, and two No. 2 universals, listed at \$825, sold for \$1000 and \$1045 respectively. When it is considered that the machines had had some usage the prices brought were exceedingly high.

The Cincinnati Time Recorder Company has bought out and absorbed the Automatic Printing Machine Company and is now manufacturing both lines under one management. Additional machinery has been added in the way of punches and shears. Trade is stated to be excellent. A. K. Nippert is president, C. H. Gamble vice-president and W. L. Campbell secretary and treasurer. The plant is located at 1725 and 1727 Central avenue, Cincinnati.

Government Purchases.

WASHINGTON, D. C., September 18, 1906.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until October 9 for the following machine tools for the New York Navy Yard: Schedule 149, lathes, milling machine, shaper; schedule 150, milling machine, drills, boring mill, hammer, pipe cutter, lathes, shear and slotter.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until September 25 for motor generator, generating set, water tube boilers, motor and other supplies for the Eastern navy yards.

The Bureau of Supplies and Accounts, Navy Department, Washington, will receive bids until October 9 for generators and various electrical supplies for the navy yards.

The Isthmian Canal Commission will receive bids until October 2, Circular No. 330, for motor generating set, drill presses, chain hoists, &c.

The following bids were opened September 11 for supplies for the navy yards:

Bidder 4, American Hoist & Derrick Company, St. Paul, Minn., informal, no guarantee; 5, Allis-Chalmers Company, Milwaukee, Wis.; 29, Compressed Air Machinery Company, San Francisco, Cal.; 39, S. Faith & Co., Philadelphia, Pa.; 50, General Fire Extinguisher Company, Providence, R. I.; 52, Gamwell & Wheeler, Seattle, Wash.; 53, G. & W. Mfg. Company, New York; 65, Hosher-Platt Company, New York; 70, Harron, Ricard & McCone, San Francisco, Cal.; 101, Manning, Maxwell & Moore, New York; 110, Niles-Bement-Pond Company, New York; 122, Pittsburgh Industrial Iron Works, Pittsburgh, Pa.; 138, B. F. Sturtevant Company, Philadelphia, Pa.

Schedule No. 79.

Class 1. One lathe—Bidder 29, \$2813.

Class 2. One band saw machine—Bidder 52, \$685; 70, \$767.10 and \$570.10.

Class 3. One 4600-lb. steam hammer—Bidder 101, \$4540; 110, \$4625.

Class 5. One jump saw—Bidder 5, \$604.

Class 6. One 5-ton derrick, six coal tubs and one grab bucket—Bidder 4, \$5152.00; 53, \$4377; 65, \$4988.50; 122, \$3930, \$4080, \$4290 and \$4140.

Schedule No. 100.

Class 21. Heating and ventilating apparatus in building 18—Bidder 39, \$14,985; 50, \$8400 and \$18,620; 138, \$12,990.

Under bids opened September 4, Circular No. 324, for pneumatic tools for the Isthmian Canal Commission, the Chicago Pneumatic Tool Company, New York, has been awarded class 1, 20 long stroke riveting hammers, with repair parts, \$1333.43; class 4, 24 chipping and calking hammers, with repair parts, \$1224.76; class 7, 10 angle shears, with repair parts, \$359.59; class 8, 12 wood boring machines, with repair parts, \$943.17.

The following awards have been made for machinery for the navy yards, bids for which were opened August 28:

Crescent Machine Company, Leetonia, Ohio, class 11, one angle band saw, \$526.50.

Fox Machine Company, Grand Rapids, Mich., class 12, one pattern makers' lathe, \$925.

J. A. Fay & Egan Company, New York, class 13, one combination boring machine, \$574.

Vandyck, Churchill Co., New York, class 14, one automatic saw grinder, \$150.

Brown & Sharpe Mfg. Company, Providence, R. I., class 15, one universal reamer and cutter grinder, \$228.96.

American Blower Company, New York, class 16, one vertical automatic steam engine, \$226.

Frevert Machinery Company, New York, class 72, one Groton disk grinding machine, with accessories, \$500.

John B. Roache, Brooklyn, N. Y., class 81, hydraulic jacks, \$322.

Buffalo Forge Company, Buffalo, N. Y., class 22, one steel pressure blower, \$37.

Pratt & Whitney Company, Hartford, Conn., class 1, one 14-in. new model engine lathe, \$650.

Niles-Bement-Pond Company, New York, class 21, one 2500-lb. single frame steam hammer, \$1791.50; class 23, one toolroom lathe, \$361.

Under bids opened September 4 for supplies for the navy yards John B. Roache, Brooklyn, N. Y., has been awarded class 11, two hydraulic jacks, \$81.56; Hisey-Wolf Machine Company, Cincinnati, Ohio, class 132, one portable electric grinder, \$96.

Trade Publications.

Motors.—Northern Electrical Mfg. Company, Madison, Wis. Bulletin No. 53, superseding Nos. 37 and 37A. Size, 6 $\frac{1}{4}$ x 10 $\frac{1}{2}$ in.; pages, 36. Refers to the Northern single voltage variable speed motors, and a number of illustrations show their use in the driving of machines and machine tools. A considerable amount of reading matter deals with the subject of motor drive and the economy and convenience of Northern systems for shop and factory operation.

Electrical Manufacturing Machinery.—E. W. Bliss Company, Brooklyn, N. Y. Catalogue No. 12. Size, 5 x 7 $\frac{1}{4}$ in.; pages, 52. Devoted especially to presses and other machinery for producing electrical parts, such as armature disks and segments, parts of electric motors and dynamos, instruments, telephone cup stampings, electric lamp sockets, reflectors, sheet metal call boxes and many other parts for electrical work and appliances.

Refrigerating Machinery.—De La Vergne Machine Company, foot of East 138th street, New York. Pamphlet. Size, 6 x 9 $\frac{1}{4}$ in.; pages, 48. Describes various types of horizontal and vertical ammonia compression refrigerating machines and equipment for ice plants, breweries, packing houses, &c. This pamphlet is intended to illustrate rather than describe the various types of refrigerating and ice making machines made by the company. The illustrations include views of plants installed in various parts of the world and diagrams of typical arrangements for complete systems.

Generators and Fan Motors.—Fort Wayne Electric Works, Fort Wayne, Ind. Bulletin and two pamphlets. Bulletin No. 1079, superseding No. 1050, deals with direct connected type MPL direct current generators for power and lighting. The general construction of the generators is described and illustrated, and photographs of important installations are also given. The Wood fan motors are discussed in both the pamphlets, and are made in five types; stationary desk, suspended revolving, dragon bracket, universal bracket and telephone booth, and in two sizes, 8 in. and 10 in. for direct current and alternating current, 60 and 125 to 140 cycle circuits of standard voltages. Price-lists are included in both pamphlets.

Derails.—Hayes Track Appliance Company, Geneva, N. Y. Pamphlet No. 42. Describes the lifting derail which can be operated either in an interlocking plant or by pipe line from the main track switch stand or directly by the switch stand. It is made in one size, which will fit any standard rail from 4 to 6 in. high, and consists of two malleable castings, no cranks, hinges or gears being used. This derail is not destroyed by a derailment, and no special fittings are required. A derail operating stand, lifting derail with operating stand, pivot derail, target stand and pivot derail with target stand are also described.

Electrical Equipment.—General Electric Company, Schenectady, N. Y. Miscellaneous literature. Bulletin No. 4438 pertains to alternating current two and three phase induction motor panels for 2080 volts, 25 to 60 cycles. No. 4439 deals with GEA-605-A railroad motors; No. 4440 deals with 25-kw. Curtis steam turbine generators. Flyer No. 2186 is on the subject of cast grid rheostat supply parts; No. 2187 refers to a primary cutout for pole line work, 2500 volts, 100 amperes max.

imum capacity, and No. 2188 to type MD manhole fuse boxes for installation in manholes. Supply catalogue No. 7599 lists form 2 luminous, direct constant current series inclosed arc lamps, with swinging upper electrodes. Publication No. 9140 illustrates and describes several styles of electric radiators.

Machine Tools and Supplies.—Scully Steel & Iron Company, Halstead and Fulton streets, Chicago. September and October stock list. Size $4\frac{1}{4} \times 7$ in.; pages 144. This last issue of the company's regularly published stock list covers the usual large variety of stock, including steel plates and sheets, shafting, tubing, rivets, boiler parts, bolts and nuts, bar iron, structural shapes, wire rope and all kinds of machines and tools used in boiler and forge shops and by iron workers. As is customary, a considerable amount of useful information is included and a complete index gives ready reference to all the subject matter.

Riveting Machines.—John F. Allen, 370 Gerard avenue, New York. Catalogue. Covers a line of portable pneumatic percussion and compression riveting machines for structural and elevated railroad work, bridge building and boiler making. The jaw riveters embrace a range having reaches from 19 to 66 in. Compression lever riveters, lattice column riveters and portable pneumatic hammer boiler riveters are among the specialties illustrated and described at some length. Numerous illustrations show the tools in use, and a number of testimonial letters are included in this catalogue as well as in an accompanying pamphlet.

Heating Boilers.—Boynton Furnace Company, 207 Water street, New York City. Catalogue 80. The company's latest catalogue on hot water heaters and low pressure steam boilers. Several types and sizes are shown, among them the sectional heaters and boilers, which by virtue of their construction are cheaper in first cost and are easier to install.

Locomotive Cranes.—Brown Hoisting Machinery Company, Cleveland, Ohio. Pamphlet K. Particularly refers to Brownhoist locomotive cranes with Brown patent grab-buckets for handling coal, ore, sand, &c. Several illustrations show the use of such equipments in coaling locomotives, storing coal and handling bulk material.

Iron and Steel Works Equipment.—Wellman-Seaver-Morgan Company, Cleveland, Ohio. Section C of the company's publications on the foregoing subject, this one dealing with open hearth and reheating furnaces. Size 9 x 12 in.; pages 48. Several large illustrations are given of notable equipments, among them two Wellman 30-ton stationary open hearth furnaces, at Wickwire Bros., Cortland, N. Y. Extended descriptions are given of open hearth steel melting furnaces of the stationary and rolling types. In connection with reheating equipments the company builds and installs soaking pits, reheating furnaces, continuous heating furnaces, gas producers, reversing valves, ingot strippers, ingot tilting cars, soaking pit cranes, charging and manipulating apparatus for reheating furnace work, inlet and outlet pushers for continuous heating furnaces, &c. An illustrated description of the Forter patent water sealed reversing valve is also given.

Wood Working Machinery.—Oliver Machinery Company, Grand Rapids, Mich. Catalogue B. Size 6 x 9 in.; pages 300. This is a most comprehensive catalogue on wood working machinery, and is unique in that it devotes a good deal of space to the subject of general dimensions of the machines produced, so that operators and buyers of machinery can tell in advance what space will be required. The more complete subject of the catalogue is "Wood Working Machinery and Mill Supplies for Pattern and Cabinet Makers, Furniture Workers, Carpenters, Builders and Contractors, Specially Adapted to the Requirements of Government Arsenals, Navy Yards, Docks and Their Various Bureaus." As this includes practically everything necessary in wood reduction, the futility of mentioning the machines even by classification is at once apparent. The catalogue being thoroughly indexed, any part of it may be quickly consulted.

Machinery.—Williamette Iron & Steel Works, Portland, Ore. Loose leaf circulars and holder. Size 7 x 9 in.; present number of pages 62. Among the products so far covered are standard boxes and pillow blocks, a universal friction device, shafting, saw mill machinery, logging engines, hoisting engines and electric hoists, marine engines, vertical and horizontal engines for power, power transmitting machinery and hoists for shipboard. Succeeding circulars will be given new page numbers or the numbers of the pages they supersede.

Grinding Machines.—Norton Grinding Company, Worcester, Mass. Catalogue. Size 6 x 9 in.; pages 55. Devoted to the Norton plain machines for cylindrical grinding. The machines are furnished with three styles of drive—overhead, electric and self-contained electric. The general features of the machines of this class are first described at some length and followed by illustrations of the various sizes, with specifications on facing pages. The machines so treated include cylindrical grinding machines in the following sizes: 10 x 50 in., 10 x 72, 10 x 96, 10 x 120, 14 x 72, 18 x 96, 18 and 30 x 96 (a gap machine), 18 x 120, 18 x 144 and 18 x 168 in. All three styles of drive are illustrated and several samples of work are shown.

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HARDWARE

IN offering for public absorption \$9,000,000 of the \$10,000,000 of preferred shares of Sears, Roebuck & Co., the Chicago mail order house, recently incorporated under the laws of New York with \$40,000,000 capital, its underwriters present a financial statement showing the stupendous net earnings during the past four years, which surpass the most optimistic conjectures as to the profits of this corporation. It is to be regretted that the statement is lacking in such minor details as would permit of a comparison of the earnings with capital investment during this period, although the balance sheet as of July 1, 1906, gave certified assets aggregating \$51,089,618.47. On the basis of the sales the earnings show a big percentage of gain none the less, having amounted to a trifle over 8 per cent. in 1902 and 1903, while in the two ensuing years they fell off a trifle, as shown below:

For the year ending December 31.	Sales.	Earnings.	Percentage of earnings compared with sales.
1902.....	\$15,945,397.18	\$1,299,531.93	8
1903.....	23,252,641.96	1,882,940.29	8
1904.....	27,692,720.89	2,209,925.58	7.9
1905.....	37,879,421.74	2,857,396.45	7.6

Had the company been capitalized on its present basis during the past four years it would at no time have strained its finances to meet the obligations of its preferred shares, and dividends of no small proportions could have been declared on the common stock as well. Evidently considered of minor importance and of no concern to the prospective investor, figures appertaining to operating cost, depreciation and cost of buildings and extensions have been withheld. Of course it is assured that all extraordinary charges have also been deducted from the gross earnings in arriving at the net gains, and that these funds would have been available for distribution in the form of dividends if so desired. The showing will no doubt prove a surprise to the entire Hardware trade, including retailers whose forces are marshalled on the firing line in the battle with the catalogue houses, as well as to the jobbers and manufacturers who have unflinchingly given their unstinted support to these merchants.

Prying further into this statement, we find that the preferred stock, which carries cumulative dividends of 7 per cent., may be redeemed at any time at 125 per cent., and that under its charter the company may at any time buy its stock in the open market for treasury account, and when so purchased shall cancel the same. In this respect the charter emulates the provision of those issued by the State of New Jersey, and which all but permit corporations to engulf themselves if they so desire. Notwithstanding this premium of 25 per cent., which threatens the preferred shares, the underwriters will pitch the unsold balance into the gaping maw of an insatiate investing public at \$97.50 per share (ex-October 1 dividend). In explanation of failure to offer the entire issue, it is stated that a large portion of the above named preferred stock has been sold at private sale, and the unsold balance is offered for public subscription. Reference to the disposition of the common stock is another interesting feature that has been omitted from the statement.

The balance sheet of July 1, 1906, gives the following assets and liabilities:

Balance Sheet, July 1, 1906.

To capital authorized and issued:		
100,000 shares of 7% cumulative preferred stock of \$100 each	\$10,000,000.00	
300,000 shares of common stock of \$100 each	30,000,000.00	\$40,000,000.00
To current liabilities:		
Due to customers and employees	\$2,943,673.47	
Sundry tradesmen for merchandise	2,384,604.80	
Other open accounts	56,340.20	
Bills payable	5,705,000.00	\$11,089,618.47
		\$51,089,618.47
By real estate, buildings, plant, machinery, fixtures, good will and patents and investments in securities of other corporations	\$38,552,206.04	
By stock of merchandise and supplies on hand	8,038,677.10	
By investments in and advances to outside enterprises owned entirely by company	200,600.58	
By debtors, loans and bills receivable:		
Advances to manufacturers	\$1,932,678.59	
Sundry persons	342,853.44	
Due from customers	271,805.49	
Due from railroads, express companies and common carriers for goods in transit, claims, &c., &c.	309,978.99	2,848,311.51
By insurance and interest paid in advance	161,898.93	
By cash at banks and in hand	1,287,924.31	\$51,089,618.47

Although not clearly indicated by the above, we find, in referring to a previous statement of the underwriters, that "the sellers to us of the said stock guarantee that the New York corporation will have on July 1, 1906, a minimum of \$10,000,000 in assets over all liabilities."

The presentation in bulk of the value of the real estate, buildings, plant, machinery, fixtures, good will and patents and investments in securities of other corporations at \$38,552,206.04 may be in keeping with latter day ethics of the financial world, but a separation of the items, with their respective values, it would seem, should be given the prospective purchaser of these shares. At the time the company's new plant was constructed it was reported that the cost of the buildings alone would be \$5,000,000, and with a generous allowance of a like sum for the cost of its other properties in Cook County, together with the tract upon which these buildings have been built, the total estimated value of real estate and buildings in Chicago would not exceed \$15,000,000 at the outside. The item of stock, merchandise and supplies, it will be noted from the above statement, is covered in a separate item and is placed at \$8,038,677.10. Making still further allowances for plant valuation, there is nevertheless a balance of upward of \$20,000,000 or \$25,000,000, that covers good will, patents and investments in securities of other corporations. Good will is the intangible asset of a corporation that forms a basis of the promoters' operations and makes possible its capitalization on a basis commensurate with its earnings estimated on the market

value of money without reference to the value of the tangible property. In this instance the stock issued to cover this item would prove interesting, to say the least. The specific statement of investment and advances to enterprises owned directly by the company, which amounts to \$200,658, directs attention to "investments in other corporations," which is hidden in the largest item of its assets.

In this connection it is apropos to refer to the latest catalogue of one of the largest mail order houses, which is a fitting tribute to the faithful and untiring efforts of the Joint Catalogue House Committee. The absence of many Hardware manufacturers that appeared in previous issues proclaims the successful work of this body, which has been pursued in a manner that merits approbation of all affiliated with the Hardware trade.

Condition of Trade.

Our readers will be impressed with the uniform testimony borne by our special correspondents in the leading Hardware centers to the large volume of business and the very promising condition of things in the trade. The difficulty in getting goods is becoming more pronounced, as many of the manufacturers who have been behind their orders find themselves falling still further into arrears, while at the same time factories in other lines are becoming overtaxed, the majority of them being unable to make prompt shipments of completed orders. Production is, however, as it has been for some time, going on at a great pace, and an extraordinary volume of goods is entering the market, passing through the channels of trade into the hands of consumers. The strength of the Iron market is, of course, an important factor in the situation, and gives tone to the prices of products all along the line. The difficulty, however, in getting material has much influence in bringing about the present condition of things, as the factories are thus prevented from turning out as many goods as their manufacturing facilities would permit. The congested state of the railroads and their inefficient transportation facilities further complicate the situation, explaining in part the difficulties manufacturers have in getting their supplies and the delay of merchants in receiving their goods, held up in many cases as they are by detentions on the way. The conservatism of the manufacturers in the matter of prices is commendable. In not a few lines premiums beyond the regular prices are being paid for prompt deliveries and advances more or less slight are gradually developing. Manufacturers, however, recognize the desirability of keeping prices down and preventing a runaway market, which so often in the past has been the precursory of reaction and demoralized conditions. In pursuing this policy the great interests are setting an example which is in general followed by the manufacturers in the finished products and the minor branches of the trade. Notwithstanding this conservatism a good many advances are taking place little by little, and goods which have not advanced are almost uniformly held very firmly in view of the large demand and the increased cost of producing them. Among the notable advances mentioned in the following columns are those in Locks and Builders' Hardware and Bolts, Nuts, &c., both lines in which the demand is very heavy and the manufacturers behind their orders.

Chicago.

The scarcity of practically all lines of Light and Heavy Hardware is growing more pronounced daily and shipments from manufacturers are being further deferred. The car shortage is likewise becoming more acute and goods are in transit longer than at any time this year. Manufacturers, instead of catching up on their order books, are falling behind, the consumptive demand surpassing all previous records of the trade. To replenish their stocks many Western jobbers are ordering small shipments sent forward by express, being unable to wait for larger orders by freight, thereby greatly increasing the expense of transacting business. The number of new accounts opened thus far this month by merchants engaged in the Hardware trade shows a comfortable increase over those booked during the same period last year, and these complete stock orders in the total have been of large volume. While the movement of goods to San Francisco is still large, the heavy demand which followed the earthquake has largely subsided, as the first orders in many instances encompassed complete and assorted stocks. During the period immediately following the destruction of the city one local distributor was represented by six salesmen, while other jobbers were proportionately well represented. That heavy stocks existed at that time which were almost immediately available was a particularly fortunate coincidence and made it possible to relieve the shortage in a comparatively short time. Notwithstanding the interest that has been aroused in the forthcoming schedule of next season's quotations on Wire Cloth, owing to the low prices that have been prevailing, it is probable that the announcement will be deferred at least 30 days. Last year prices were not established until October 27. In the meantime several manufacturers have withdrawn all quotations in view of the close of the present season, current demand having been satisfied. The shortage of canning goods, including Jars, Parers, Seeders, &c., and the steady stream of filling-in orders that are being received from retailers, reflect the heavy fruit crop which has been harvested in the fruit producing States. The call for cider presses has also been so heavy that one local jobber has been compelled to order an additional lot for quick shipment. The cold wave which passed over the Northwest last week has resulted in insistent calls for the immediate delivery of Heaters that were not to have gone forward until next month. While not a general condition, one Stove manufacturer reports that the demand for the smaller sizes of Heaters is almost insatiable and that in view of the reverse conditions which obtained last year stocks of the larger sizes were increased and the production of the smaller ones curtailed, and as a result his stocks of the latter have already been sold.

St. Louis.

THE NORVELL-SHAPLEIGH HARDWARE COMPANY.—Business continues in usual volume. Agricultural reports indicate great crops in wheat, corn and cotton. Fruit will go to waste for lack of hands to pick it.

A serious shortage of goods is developing in many lines. Retail dealers and salesmen hardly appreciate the efforts jobbers are making to get goods. As there seems no doubt the tremendous demand will continue, we can see nothing in sight to help the situation. Manufacturers report not only a scarcity of raw material, especially malleable iron, but the impossibility of securing enough skilled labor. Not only is there a scarcity of Axes, but it is almost impossible to secure Axe Handles. The famine on fruit goods we predicted 60 days ago is now at hand.

While prices under these conditions are very firm, the fact that so few advances have taken place is the most striking characteristic of the present situation. Manufacturers in the Hardware line have surely been very conservative. It is a fact that jobbers are not advancing prices, even when they receive small shipments of those goods that are so exceedingly scarce. It seems to be the general opinion that the retail dealer never advances his prices until he finds it necessary to change his costs.

All are familiar with the prevailing high money rates; for everything we buy in other lines we are paying higher prices, but for some curious and unknown reason the Hardwareman, manufacturer, jobber and retailer do not revise their prices.

We see catalogue houses quoting extremely low prices on the same goods on which manufacturers cannot supply the demand from the jobbing and retail trade. Does the fear of printed prices prevent the jobber and the retailer from regulating their prices according to the law of supply and demand?

The printed price levels all conditions. Is not the printing of prices in wholesale catalogues as great a menace to the profits of the jobbers as the printing of prices by the catalogue house selling to consumers has been to the profits of the retail dealers? Of one thing we may be sure—while the printed price may lead to cheapness in cost of doing business, it does not make for a high quality of goods. Goods of standard quality when quoted either in wholesale or retail catalogues are simply a stalking horse to cover unknown lines.

Notwithstanding the wonderful statement of sales and profits of a certain catalogue house, from a report in a financial journal of Chicago, it would seem the public is not jumping at this stock like a hungry trout after a fly.

Cleveland.

THE W. BINGHAM COMPANY.—There is an exceedingly good demand for Hardware, Mining, Milling and Manufacturers' Supplies, and it is sometimes difficult to get some of the goods from the manufacturers promptly, but they are using every means possible to supply their jobbing friends promptly. The demand seems to be greater than the supply on many articles, and it is noticeable that many of the articles short are of a class mechanics use, showing there is a large amount of building going on throughout our land.

Money seems to be cheap and plenty, and the immense crops of grain and fruit in sight is an incentive for our people to buy liberally and to erect larger and more expensive buildings than heretofore. With the majority of the trade nowadays it is not so much the price of the goods as it is the quality that is wanted, and it is very gratifying to know that this kind of education is going on through the land—viz., for a better class of goods.

The continued advance in the price of metals and labor is a very great factor in the cost of goods at the present time, and is going to be so in the future, for the manufacturers must replenish their stocks at present prices and therefore must exact higher prices from the dealer.

The price of ingot copper is now around 20 cents per pound, with no surplus supply; pig lead around 6 cents per pound; pig tin around 40 cents; also there has been a steady advance of late in pig iron, and these advances in price of metals, together with the unrest and demands of laborers, is going to make higher prices for the manufactured articles.

In view of these conditions, is there any reason why there should not be advances in prices on many lines of Hardware, and would it not be well for our retail friends to look over their stocks carefully and replenish them at once from some of their jobbing friends who are supplied with goods bought at the old prices?

When one stops to think of what great producers we are of corn and other cereals, and the good prices farmers obtain for same, we cannot see any reason why prosperity should not stay with us a long time and prices tend upward rather than downward, and when our immense grain and fruit crops are gathered surely our measure will be full and running over.

Nashville.

GRAY & DUDLEY HARDWARE COMPANY.—Trade conditions in the South are not materially different from what they have been for the past 30 days. The strong demand for goods continues. While the advance in the price of pig iron, coke and some other materials entering into the manufacture of Hardware have, no doubt, had a tendency to stimulate the market, close observation leads

us to believe that this is one time when the only real factor in advancing prices has been a legitimate demand for goods. The country is in a most excellent condition on account of increased production in agriculture, mining, &c., and manufacturers and merchants have a greater demand to supply than they have ever had in the past. The demand for Hardware seems to cover a general line. The orders for Leather Goods seem to be larger than usual. The strike of the harness makers in this city is causing some annoyance, but it is not considered very serious, as labor unions have never been able to get a strong foothold in this section in any line of business.

The mining industries in this section are prospering greatly. More coal and iron are being mined than at any previous time in the history of the country. Phosphate mining is in a more prosperous condition than ever before; the tremendous demand created for this fertilizer caused by the rapid advances made in agriculture in the South has simply made the phosphate miner wealthy in so short a time that he can scarcely realize it. New mines are being opened in this State almost every day; every section that produces phosphate is being thoroughly prospected, and it is strange to say that we cannot point to an operator of a phosphate mine who is not making money rapidly.

Another mining industry that bids fair to become a dividend earner is the cobalt mines. A few months ago Thomas A. Edison sent experts into some of the counties of Tennessee to prospect for cobalt, which has been found in very considerable quantities. We judge that Mr. Edison is certainly very much interested in the territory from the reports he has received, from the fact that he has recently made a personal visit to this section and thoroughly inspected the cobalt properties on which he has received reports. He still has his men in the field further prospecting the entire section. He expresses himself as being well pleased with what he has seen and thinks the cobalt which will be mined from this locality will greatly aid in the development of electricity in this country.

Business conditions generally are quite satisfactory. We have had with us the Hon. Leslie M. Shaw, Secretary of the Treasury, who addressed us in an entertaining manner last night. Suppose we will hear the other side next week, when we are visited by the Hon. W. J. Bryan. We are very busy, but will give them both a hearing.

Philadelphia.

THE SUPPLEE HARDWARE COMPANY.—Business activity continues unabated and all signs point to a fall trade of large proportions. Were it not for the difficulties experienced in obtaining goods from the manufacturers everything would seem to be just as the jobber would have it; but there is no rose without its thorns, and the particular thorn that is now pricking the jobbers is their inability to secure certain kinds of leading goods. We feel sure that manufacturers are doing all they can to relieve the strain, but conditions in this respect do not seem to improve, and it is a very hard thing to please your customers, who may have orders with you for goods that it is almost next to impossible to get.

It is well known that there is a great scarcity existing in the line of Builders' Hardware, especially in Locks, and it is a matter that is really becoming serious. We are hoping, however, that there may be a change and that goods may be more easily obtained, but we would not change any of the conditions at the expense of trade, even in the slightest degree—far rather the struggle for goods.

Business is once again running in the same old groove; absentees have all returned and respective duties are being taken up as heretofore. We think that the business outlook for 1907 is already fairly well established and we are looking for a continuance of the present activity. Specifications for season goods are as large as formerly and we feel we are not optimistic in our views and really can see nothing that would indicate any change in the business outlook. Collections are fairly good.

Portland, Oregon.

FAILING, HAINES & McCALMAN.—If the fall business in this territory is anywhere near as good proportionally as the summer business has been it will be the greatest

year that the Portland jobbers have ever seen; and as far as one can foretell the future it will continue, as all natural conditions are favorable and there is no sign of a let-up. The only worry of the jobbers is to get the goods, as the great rush in summer caught them prepared only with the stocks necessary for the usual slow summer season. This prosperity is not confined to the Hardware trade alone, but is shared in by all classes of the community. With all the products of this territory selling at a very good price and with a constantly increasing demand, prospects are very bright.

Louisville.

BELKNAP HARDWARE & MFG. COMPANY.—The market is still strong, as reflected in all of the daily papers as well as in the trade journals. There is very little left to be said on this score. All of the arguments have been on the bull side, and there is absolutely nothing to contradict. There is manifest a powerful demand for goods from the smaller country trade, as well as from the railroads and construction companies. In fact, there is no one actively engaged in business of any kind who does not seem to have very acute desires for Tools, household goods and building material to be ministered to.

The factories are evidently filled up with large and comparatively simple orders. Such a thing as prompt factory shipments of small complex specifications is almost out of the question. Jobbers' stocks are being drawn on heavily. We predict at the close of the season they will be pretty nearly cleaned up, or at least run much closer than usual.

The weather has been ideal for filling out and hardening the corn, and already processions of porkers are passing through our streets in true bucolic fashion. Their remonstrating grunts as they are prodded up by the herder bear directly upon the array of Sausage Machines which appear in our sample room. Altogether the country is going to be fed this winter, and at no very great expenditure of labor either. Wages are high and the various branches of labor are independent. That is nothing to groan over, but rather something to rejoice at.

Boston

BIGELOW & DOWSE COMPANY.—Trade in New England is increasing as the cool, bracing September air gives new life and energy to its people. Mills of all kinds have been running full time all summer, and there is no apparent accumulation of stock. This is particularly manifest in those manufacturing Hardware and kindred products. It is hard to get goods now, and as the season advances it will be still more difficult. Factories have sold their products and the railroads are congested with freight even this early in the season; later on it looks like there would be lots of kicking. Surely there can be no loss in buying early and liberally.

Nineteen hundred and six has been a good year, but many prophets are banking on 1907 being a better. The immense returns for this year's crops will insure a strong market in the future. The recent advance in Builders' Hardware indicates the strength in the prices of raw materials and the confidence of the manufacturer in present market values. This advance was made without any warning to the trade, which indicates a new policy as a result of the close working agreement among the large manufacturers. It now looks like the buyer who carefully studies the market in the future would have the advantage of him who depends on others caring for him. Many old ways are giving place to new, but this placing the buyer on his mettle is a most striking innovation. It will certainly lessen the manufacturers' back orders, and some Rip Van Winkles will have to wake up or get out.

NOTES ON PRICES.

Wire Nails.—It is generally understood that nearly all independent producers of Wire Nails are in favor of an advance in prices. They base their arguments on conditions which have frequently been referred to in these columns, instancing the acute shortage of raw material, the scarcity of labor, the enormous demand from all sections of the country and the impossibility of filling

orders promptly. One important manufacturer has recently made an advance of 5 cents per keg independently of his competitors. At the same time, however, the interests in control of the market continue to hold it in check, consistently adhering to the policy which they have adopted and for which they doubtless have reasons not fully appreciated by the trade at large. Quotations are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers.....	\$1.85
Carload lots to retail merchants.....	1.90

New York.—Notices of shipments are just being received on Nails ordered a month ago. There is increasing difficulty on the part of local jobbers in filling orders promptly. At the same time some slight concessions are reported, due to competition. Small lots from store are being sold at a base of \$2.05 per keg.

Chicago.—New tonnage placed with the leading mills thus far this month exceeds that closed during the same period last year, and specifications are still greatly in excess of production. Concessions of \$1 a ton that were made on desirable business earlier in the month by a few of the independent mills have been withdrawn and for material for immediate shipment several manufacturers are now asking premiums of the same amount. Stocks generally, both at mills and in the hands of large distributors, are exceedingly low, and the car situation, while somewhat improved, still delays deliveries. Quotations are firm but unchanged, as follows: \$2 in car lots to jobbers and \$2.05 in car lots to retailers, with an advance of 5 cents for less than car lots from mills.

Pittsburgh.—New tonnage in Wire Nails booked so far this month is almost as large as in August, which was a record breaker, and all indications point strongly to a shortage in supply of Wire Nails during the fall months. Demand has been so active that the mills have not been able to accumulate any large stocks, while the jobbers are practically bare of Nails. A shortage in cars is being felt to some extent, but the principal trouble the mills have to contend with is to get a full supply of steel, which they are not able to do and have not been able to get for some time. This is naturally keeping down output, which is much smaller than it would be were the mills able to get steel promptly. It is said that requirements of Wire Nails this year are very much in excess of last year, while output of the mills is little if any larger. Prices are very firm, but occasionally some of the smaller mills shade the regular market about 5 cents a keg for desirable orders. We quote: Wire Nails, \$1.85 in carloads to the large jobbing trade and \$1.90 in carloads to retail merchants, f.o.b. Pittsburgh, plus actual freight to point of delivery, terms 60 days, less 2 per cent. off for cash in 10 days.

Cut Nails.—Manufacturers now producing Cut Nails are making no progress in catching up on their deliveries. They report increasing difficulty in securing raw material. Consumption seems to be steadily growing and much inconvenience is caused by the fact that Nails cannot be supplied as needed. In many cases sales now made are at a premium of 5 cents per keg, although official quotations remain as follows: \$1.80, base, for carload lots, f.o.b. Pittsburgh; \$1.85 for less than carloads, f.o.b. Pittsburgh; \$1.95 for carload lots, on dock, New York; \$2 for less than carloads, on dock, New York. Iron Cut Nails at points west of Buffalo and Pittsburgh are held at 5 and 10 cents advance on Steel Cut Nails.

New York.—No improvement has been observed in the local situation during the past week, some jobbers reporting their stocks so low that they are practically out of the market. They also state that they receive no encouragement from the mills as to the shipment of their orders. There is a continued urgent inquiry for spot Nails. Quotations on small lots from store are on the basis of \$2 per keg.

Chicago.—Much difficulty is being experienced by local distributors in getting shipments from the East and the trouble seems to become worse from day to day. Reports from the mills indicate a shortage of steel, and the delayed transportation of material is also a fac-

for curtailing receipts. Demand is increasing and if the Nails could be had a much larger trade would be in progress than is possible with the present scarcity of supply. Quotations prevail as follows: Steel Cut Nails, in car lots, \$1.90 to \$1.95; less than car lots, \$2; Iron Cut Nails, \$2 to \$2.05, in car lots; less than car lots \$2.10.

Pittsburgh.—Demand for Cut Nails has shown a material increase and the mills are shipping out their product as fast as made in filling new orders and on specifications which are coming in freely. Some of the Cut Nail mills believe an advance is imperative and are firmer in their ideas as to prices. The continued shortage in Steel is restricting output and this does not promise to be relieved for some time. We have advanced prices 5 cents a keg, and note that some Eastern mills are quoting \$1.85 on new business. We quote Cut Nails at \$1.80, base, f.o.b. Pittsburgh, for carload lots, and \$1.85 in less than carload lots. Iron Cut Nails at points west of Buffalo and Pittsburgh are held at 5 to 10 cents advance on Steel Cut Nails.

Barb Wire.—While the amount of new tonnage is not heavy, the mills are receiving large specifications on contracts, and jobbers are urgently demanding immediate shipment. Delays are generally reported, however, manufacturers being hampered by shortage of raw material. Quotations remain as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots	\$2.00	\$2.30
Retailers, carload lots	2.05	2.35
Retailers, less than carload lots.....	2.15	2.45

Chicago.—While there has been a slight decline in the volume of new business, the urgent demands of large jobbers for the immediate shipment of material indicates that their stocks are exceedingly low. As on Nails, a few of the independent manufacturers are asking slight premiums for immediate shipment, although on large orders the following prices prevail: To jobbers, Chicago, car lots, Painted, \$2.15; Galvanized, \$2.45. To retailers, car lots, Painted, \$2.20; Galvanized, \$2.50; retailers, less than car lots, Painted, \$2.30; Galvanized, \$2.60; Staples, Bright, in car lots to jobbers, \$2.10; Galvanized, \$2.40; car lots to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

Pittsburgh.—A fair amount of new tonnage is being placed, but buyers are specifying liberally on contracts placed some time ago, and shipments by the mills are heavy. There is still a shortage in supply of Steel, which is keeping down output. Prices are firm, but continue to be shaded by some of the independent mills about \$1 a ton on desirable orders. We quote: Painted Barb Wire, \$2, and Galvanized, \$2.30, in carload lots to the large jobbing trade, with the usual advance of \$1 a ton to retailers in carload lots, f.o.b. Pittsburgh, 60 days, or 2 per cent. off for cash in 10 days.

Smooth Fence Wire.—The demand for material for manufacturers using Smooth Fence Wire continues without abatement, specifications on contracts coming in so freely that mills are four to six weeks behind on deliveries. The fall trade promises to be the heaviest ever known.

Chicago.—There is no abatement in the demand for material on contracts placed by manufacturers earlier in the year, and deliveries are deferred from three to four weeks. Independent manufacturers of Field Fencing report the demand the greatest in the history of the trade, and their consumption of Smooth Wire is in proportion. Prices are firmly maintained on the following basis: Jobbers, \$1.85, f.o.b. Chicago, in car lots; retailers, \$1.90.

Pittsburgh.—Contracts placed by Field Fence makers are very heavy, and specifications are coming in so freely that they are in excess of shipments, with the result that the mills are already from four to six weeks behind in deliveries. Stocks accumulated by the mills in the summer months are moving out very freely, and fall trade this year in Fence Wire promises to be the heaviest ever known. The market is firm, but occasionally some of the independent mills shade official prices about \$1 a ton on

desirable orders. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	\$1.70
Retailers, carloads	1.75

The above prices are for base numbers, 6 to 9.

Builders' Hardware.—The principal manufacturers of Builders' Hardware, at a meeting held Thursday, September 13, advanced this class of goods 11 per cent., the change becoming effective that day, this being equivalent, for example, to 33 1-3 per cent. discount now, where previously in some quarters the discount had been 33 1-3 and 10 per cent. The advance applies to all Builders' Hardware except such goods as are quoted at net prices and some Cast Iron goods that have not been included in the classified lines, as for instance, Sheaves, Hooks, &c. A similar advance was made early in the spring, after having been postponed several weeks, it will be recalled, owing to the advances in both labor and materials. Similar conditions prevail now, and manufacturers are exerting themselves to make as prompt deliveries as possible, but are seriously behind their orders.

Wire Cloth.—Much interest is felt by the trade in the Wire Cloth situation, and no little gossip has been heard regarding possible developments in the market. While perhaps it is still a little early for placing contracts, manufacturers have shown unusual reticence in discussing probabilities and have evidenced little disposition to negotiate with buyers. This state of affairs may doubtless be explained by the report, now generally accepted as a fact, that a deal of considerable magnitude has been projected, contemplating the merger of many of the manufacturing companies under the control of a large interest producing raw material. The terms and scope of the proposed deal are not generally known, but it is now positively asserted that the project has been side-tracked for the present, if not entirely abandoned by the interests referred to. If any other plans are being made calculated to affect this season's market they should develop before long. It is generally regarded as probable, however, that conditions will remain much the same as last year, but the manufacturers refer to the need of higher prices, as those of the past yielded only a narrow margin of profit.

Stove Bolts.—There is considerable improvement in the Stove Bolt market, which has long been in a demoralized condition. Extreme quotations have in many cases been withdrawn by manufacturers, and prices may now be said to be firm at a level somewhat higher than has recently prevailed. The improved conditions are largely due to heavy demand and an increasing scarcity of stock, there being a very general complaint of slow deliveries.

Bolts, Carriage, Machine, Etc.—A meeting of leading manufacturers of Bolts and Nuts was held to-day in this city and advanced prices were decided on for all items except the smaller sizes of carriage and machine bolts. The trade will not be unprepared for this change for the reasons referred to in our last week's market report. It was induced not only by the continuance of a record breaking demand and the shortage of raw material, but also the great scarcity of labor, which is causing curtailment in the production of nearly all the manufacturers. An important change in terms is also announced to take effect October 1, on and after which date the terms on Bolts and Nuts will be 30 days net, or 1 per cent. off for cash in 10 days, instead of 60 days, with 2 per cent. for cash as heretofore. The new level of the market may be represented by the following quotations:

	Discount.
Common Carriage Bolts, $\frac{1}{2}$ x 6, smaller and shorter, cut thread	75 @ — %
Common Carriage Bolts, longer or larger than $\frac{1}{2}$ x 6, 60 and 10 @ 60, 10 and 5 %	
Machine Bolts, $\frac{1}{2}$ x 4 or shorter and smaller, with H. P. or C. P. Plain Nuts, cut thread.....	75 @ — %
Machine Bolts with H. P. or C. P. Plain Nuts, larger or longer	65 @ 65 and 5 %
Machine Bolts, all sizes, with C. & T. Nuts.....	60 @ 60 and 10 %
Machine Bolts, $\frac{1}{2}$ x $\frac{1}{2}$, smaller and shorter, without Nuts, with cut thread.....	70 and 10 %

Machine Belts, other sizes, without Nuts, 6 in. and shorter	.....65 and 10 %
Machine Bolts without Nuts, longer than 6 in.	.....65 and 5 @ 65 and 10 %
Machine Bolt Blanks	.....65 @ 65 and 5 %
Bolt Ends, with H. P. or C. P. Plain Nuts	.....65 @ 65 and 5 %
Bolt Ends, with C. & T. Nuts	.....60 @ 60 and 10 %
G. P. Coach Screws	.....75 and 10 %
Cone Point Lag Screws	.....75 and 15 %
Forged Set Screws and Tap Bolts	.....50 and 10 %

Hot Pressed Nuts.—Following are the new prices on Hot Pressed Nuts adopted by the manufacturers, as reported in the preceding paragraph:

Hot Pressed Blank Square Nuts	.....Off list. 5.00
Hot Pressed Tapped Square Nuts	.....4.90
Hot Pressed Blank Hexagon Nuts	.....5.40
Hot Pressed Tapped Hexagon Nuts	.....5.30

Cold Punched Nuts.—The new prices on Cold Punched Nuts adopted by the manufacturers are as follows:

Cold Punched Plain Blank Square Nuts	.....Off list. 4.80
Cold Punched Plain Blank Hexagon Nuts	.....5.20
Cold Punched C. T. & R. Blank Square Nuts	.....5.10
Cold Punched C. T. & R. Blank Hexagon Nuts	.....5.80
Cold Punched Plain Tapped Square Nuts	.....4.80
Cold Punched Plain Tapped Hexagon Nuts	.....5.20
Cold Punched C. T. & R. Tapped Square Nuts	.....5.10
Cold Punched C. T. & R. Tapped Hexagon Nuts	.....5.80

Snaths.—Some uncertainty is felt as to the course of the market for Scythe Snaths. Many jobbers are delaying the placing of their orders, apparently expecting the price may develop some weakness. This would not be surprising in view of the recent dissolution of the National Snath Company and the keen competition likely to result.

Soldering Coppers.—Owing to the high and advancing price of Copper metal, referred to last week in these columns, manufacturers of Soldering Coppers have advanced their prices ½ cent per pound.

Window Glass.—Some Glass is being made in a small way in various parts of the country, but the important manufacturers, with an output equal to 85 or 90 per cent. of the total production will not begin operations before October 15, and at a meeting held in Cleveland last week there was considerable sentiment in favor of not making a start until even later and perhaps November 1. Another meeting of manufacturers is scheduled for this week, when perhaps some definite action will be taken in regard to the time of resumption. Jobbers are disposed to favor as late a start as possible, as with the dull summer business stocks, while constantly diminishing, are still equal to about one-third of the annual consumption. Jobbers' quotations from jobbers' list, October 1, 1906, are as follows: Greater New York, single, 90 and 5; double, 90 and 10 per cent. discount, though 90 and 15 per cent. for both single and double strength is sometimes obtainable. Eastern District, except the Boston District, 90 and 10 per cent. discount for all sizes of single and double strength. Boston District, 90 and 15 for all sizes of single and double strength.

Linseed Oil.—The demand is only for immediate requirements, as buyers are hoping for lower prices. At the present time, however, owing to the firm position of the seed, receding quotations are regarded as unlikely. New York quotations are as follows, according to quality and seller: City Raw, 37 to 38c. per gal; out of town Raw, 36 to 39c. per gal. Boiled Oil is 1 to 2c. per gal. over Raw.

Spirits Turpentine.—Buying is of light volume and limited to small jobbing quantities. The tone of the market is firm. New York quotations are as follows, according to quantity: Oil Barrels, 64 to 64½c.; Machine Made Barrels, 64½ to 65c. per gal.

W. R. GRAEF, senior partner of Graef & Schmidt, returned to New York September 16 from a vacation trip begun July 9. Mr. Graef, accompanied by Mrs. Graef, went through the Yellowstone Park, thence to Alaska and back over the Canadian Pacific Railroad, spending about four weeks in Alberta in the neighborhood of Banff, from which place numerous side trips to points of interest were made, including some camping out experiences. The return then took them to Duluth and by steamer through the Great Lakes to Buffalo and so to New York.

Letters from the Trade.

Our readers are invited to discuss in these columns questions of trade interest connected with the manufacture or sale of Hardware. We shall be pleased to have a free expression of opinion on subjects deserving the attention of Hardware merchants and manufacturers.

Manufacturer's Stipulation in Paying for Jobbers' Catalogue Space.

From an Ohio Manufacturer: Referring to the matter of manufacturers contributing to the expense of getting out jobbers' catalogues, we beg to say that we are frequently asked to do this but decline in all cases, excepting those in which the jobber agrees to catalogue distinctly the brand of the goods and use our name in connection with the advertisement. Under such conditions we are willing to make a reasonable contribution.

"Donations" to Jobbers' Publicity Schemes

From a Manufacturer in Pennsylvania: We have recently been confronted with a new idea in the line of jobbers' exactions upon the manufacturer. A few jobbers at least seem to think it advisable to issue a small paper to their customers and are soliciting ads from the manufacturers. What action such jobbers will take toward a line, should the proposition be refused, we do not know.

Manufacturers' donations to jobbers' catalogues have so long been in practice that the jobber now practically makes the demand. If manufacturers are expected to contribute to all these schemes united action in defense will soon become a necessity. We have donated quite a sum of money during the past 12 months, and our entire investment is considerable. For ourselves the matter looks like graft, and from information we have from one manufacturer as to how he was made a tool to induce his competitors to enter a catalogue gotten out by the Heavy Hardware jobbers, we are compelled to say that regular and straightforward business methods are not being used.

Tactless and Obtrusive Salesmanship.

To the Editor: We, Yankee-like, want to ask questions. Various parties write soliciting orders for every conceivable kind of material a manufacturer can use, some of them frequently, some sending two requests or advertising circulars in the same mail, and after continuing this for a year or more, a small reminder asking why we do not answer their letters, and, quoting from one of them: "It seems about the limit had been reached in your case, and we respectfully suggest that we have at least an answer to this letter."

Now is this impertinence, undue freshness, or have we to detail one of the best employees in our office to answer these persisting would-be sellers of material? In any form that we can see it, it's a good deal of a nuisance.

The first catalogue received, if of any interest to us, is filed and made a reference should we be wanting goods in the line listed and illustrated. The other matter goes to the waste basket.

NEW ENGLAND.

Gross and Net Profit.

To the Editor: Referring to the article on "Gross and Net Profit," in your issue of September 13, we would like to ask the author what disposition he makes of the following items of expense: Taxes, insurance, freight and cartage, advertising, heating and lighting, office expenses (such as postage, printing, telephone, &c.), bad debts and depreciation of stock. Should these not be included? If they were included, would they not largely increase the percentage of expense?

CONNECTICUT.

The Board of Directors of the Southwestern Kansas & Oklahoma Implement and Hardware Dealers' Association at a meeting held at Wichita, Kan., September 5, decided to hold the next annual convention of the association at Wichita, December 11 and 13, inclusive.

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Retailers, less than carload lots.....	2.15	2.45

Chicago.—While there has been a slight decline in the volume of new business, the urgent demands of large jobbers for the immediate shipment of material indicates that their stocks are exceedingly low. As on Nails, a few of the independent manufacturers are asking slight premiums for immediate shipment, although on large orders the following prices prevail: To jobbers, Chicago, car lots, Painted, \$2.15; Galvanized, \$2.45. To retailers, car lots, Painted, \$2.20; Galvanized, \$2.50; retailers, less than car lots, Painted, \$2.30; Galvanized, \$2.60; Staples, Bright, in car lots to jobbers, \$2.10; Galvanized, \$2.40; car lots to retailers, 10 cents extra, with an additional 5 cents for less than car lots.

Pittsburgh.—A fair amount of new tonnage is being placed, but buyers are specifying liberally on contracts placed some time ago, and shipments by the mills are heavy. There is still a shortage in supply of Steel, which is keeping down output. Prices are firm, but continue to be shaded by some of the independent mills about \$1 a ton on desirable orders. We quote: Painted Barb Wire, \$2, and Galvanized, \$2.30, in carload lots to the large jobbing trade, with the usual advance of \$1 a ton to retailers in carload lots, f.o.b. Pittsburgh, 60 days, or 2 per cent. off for cash in 10 days.

Smooth Fence Wire.—The demand for material for manufacturers using Smooth Fence Wire continues without abatement, specifications on contracts coming in so freely that mills are four to six weeks behind on deliveries. The fall trade promises to be the heaviest ever known.

Chicago.—There is no abatement in the demand for material on contracts placed by manufacturers earlier in the year, and deliveries are deferred from three to four weeks. Independent manufacturers of Field Fencing report the demand the greatest in the history of the trade, and their consumption of Smooth Wire is in proportion. Prices are firmly maintained on the following basis: Jobbers, \$1.85, f.o.b. Chicago, in car lots; retailers, \$1.90.

Pittsburgh.—Contracts placed by Field Fence makers are very heavy, and specifications are coming in so freely that they are in excess of shipments, with the result that the mills are already from four to six weeks behind in deliveries. Stocks accumulated by the mills in the summer months are moving out very freely, and fall trade this year in Fence Wire promises to be the heaviest ever known. The market is firm, but occasionally some of the independent mills shade official prices about \$1 a ton on

desirable orders. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

Jobbers, carloads	\$1.70
Retailers, carloads	1.75

The above prices are for base numbers, 6 to 9.

Builders' Hardware.—The principal manufacturers of Builders' Hardware, at a meeting held Thursday, September 13, advanced this class of goods 11 per cent., the change becoming effective that day, this being equivalent, for example, to 33 1-3 per cent. discount now, where previously in some quarters the discount had been 33 1-3 and 10 per cent. The advance applies to all Builders' Hardware except such goods as are quoted at net prices and some Cast Iron goods that have not been included in the classified lines, as for instance, Sheaves, Hooks, &c. A similar advance was made early in the spring, after having been postponed several weeks, it will be recalled, owing to the advances in both labor and materials. Similar conditions prevail now, and manufacturers are exerting themselves to make as prompt deliveries as possible, but are seriously behind their orders.

Wire Cloth.—Much interest is felt by the trade in the Wire Cloth situation, and no little gossip has been heard regarding possible developments in the market. While perhaps it is still a little early for placing contracts, manufacturers have shown unusual reticence in discussing probabilities and have evidenced little disposition to negotiate with buyers. This state of affairs may doubtless be explained by the report, now generally accepted as a fact, that a deal of considerable magnitude has been projected, contemplating the merger of many of the manufacturing companies under the control of a large interest producing raw material. The terms and scope of the proposed deal are not generally known, but it is now positively asserted that the project has been side-tracked for the present, if not entirely abandoned by the interests referred to. If any other plans are being made calculated to affect this season's market they should develop before long. It is generally regarded as probable, however, that conditions will remain much the same as last year, but the manufacturers refer to the need of higher prices, as those of the past yielded only a narrow margin of profit.

Stove Bolts.—There is considerable improvement in the Stove Bolt market, which has long been in a demoralized condition. Extreme quotations have in many cases been withdrawn by manufacturers, and prices may now be said to be firm at a level somewhat higher than has recently prevailed. The improved conditions are largely due to heavy demand and an increasing scarcity of stock, there being a very general complaint of slow deliveries.

Bolts, Carriage, Machine, Etc.—A meeting of leading manufacturers of Bolts and Nuts was held to-day in this city and advanced prices were decided on for all items except the smaller sizes of carriage and machine bolts. The trade will not be unprepared for this change for the reasons referred to in our last week's market report. It was induced not only by the continuance of a record breaking demand and the shortage of raw material, but also the great scarcity of labor, which is causing curtailment in the production of nearly all the manufacturers. An important change in terms is also announced to take effect October 1, on and after which date the terms on Bolts and Nuts will be 30 days net, or 1 per cent. off for cash in 10 days, instead of 60 days, with 2 per cent. for cash as heretofore. The new level of the market may be represented by the following quotations:

	Discount.
Common Carriage Bolts, $\frac{3}{4}$ x 6, smaller and shorter, cut thread .....	.75 @ — %
Common Carriage Bolts, longer or larger than $\frac{3}{4}$ x 6, 60 and 10 @ 60, 10 and 5 %	
Machine Bolts, $\frac{3}{4}$ x 4 or shorter and smaller, with H. P. or C. P. Plain Nuts, cut thread.....	.75 @ — %
Machine Bolts with H. P. or C. P. Plain Nuts, larger or longer .....	.65 @ 65 and 5 %
Machine Bolts, all sizes, with C. & T. Nuts..	.60 @ 60 and 10 %
Machine Bolts, 4 x $\frac{3}{4}$, smaller and shorter, without Nuts, with cut thread.....	.70 and 10 %

Machine Belts, other sizes, without Nuts, 6 in. and shorter	65 and 10 %
Machine Belts without Nuts, longer than 6 in.	65 and 5 @ 65 and 10 %
Machine Bolt Blanks	65 @ 65 and 5 %
Bolt Ends, with H. P. or C. P. Plain Nuts	65 @ 65 and 5 %
Bolt Ends, with C. & T. Nuts	60 @ 60 and 10 %
G. P. Coach Screws	75 and 10 %
Cone Point Lag Screws	75 and 15 %
Forged Set Screws and Tap Bolts	50 and 10 %

Hot Pressed Nuts.—Following are the new prices on Hot Pressed Nuts adopted by the manufacturers, as reported in the preceding paragraph:

Hot Pressed Blank Square Nuts	Off list. 5.00
Hot Pressed Tapped Square Nuts	4.90
Hot Pressed Blank Hexagon Nuts	5.40
Hot Pressed Tapped Hexagon Nuts	5.30

Cold Punched Nuts.—The new prices on Cold Punched Nuts adopted by the manufacturers are as follows:

Cold Punched Plain Blank Square Nuts	Off list. 4.80
Cold Punched Plain Blank Hexagon Nuts	5.20
Cold Punched C. T. & R. Blank Square Nuts	5.10
Cold Punched C. T. & R. Blank Hexagon Nuts	5.80
Cold Punched Plain Tapped Square Nuts	4.80
Cold Punched Plain Tapped Hexagon Nuts	5.20
Cold Punched C. T. & R. Tapped Square Nuts	5.10
Cold Punched C. T. & R. Tapped Hexagon Nuts	5.80

Snaths.—Some uncertainty is felt as to the course of the market for Scythe Snaths. Many jobbers are delaying the placing of their orders, apparently expecting the price may develop some weakness. This would not be surprising in view of the recent dissolution of the National Snath Company and the keen competition likely to result.

Soldering Coppers.—Owing to the high and advancing price of Copper metal, referred to last week in these columns, manufacturers of Soldering Coppers have advanced their prices 1/2 cent per pound.

Window Glass.—Some Glass is being made in a small way in various parts of the country, but the important manufacturers, with an output equal to 85 or 90 per cent. of the total production will not begin operations before October 15, and at a meeting held in Cleveland last week there was considerable sentiment in favor of not making a start until even later and perhaps November 1. Another meeting of manufacturers is scheduled for this week, when perhaps some definite action will be taken in regard to the time of resumption. Jobbers are disposed to favor as late a start as possible, as with the dull summer business stocks, while constantly diminishing, are still equal to about one-third of the annual consumption. Jobbers' quotations from Jobbers' list, October 1, 1906, are as follows: Greater New York, single, 90 and 5; double, 90 and 10 per cent. discount, though 90 and 15 per cent. for both single and double strength is sometimes obtainable. Eastern District, except the Boston District, 90 and 10 per cent. discount for all sizes of single and double strength. Boston District, 90 and 15 for all sizes of single and double strength.

Linseed Oil.—The demand is only for immediate requirements, as buyers are hoping for lower prices. At the present time, however, owing to the firm position of the seed, receding quotations are regarded as unlikely. New York quotations are as follows, according to quality and seller: City Raw, 37 to 38c. per gal; out of town Raw, 36 to 39c. per gal. Boiled Oil is 1 to 2c. per gal. over Raw.

Spirits Turpentine.—Buying is of light volume and limited to small jobbing quantities. The tone of the market is firm. New York quotations are as follows, according to quantity: Oil Barrels, 64 to 64 1/2c.; Machine Made Barrels, 64 1/2 to 65c. per gal.

W. R. GRAEF, senior partner of Graef & Schmidt, returned to New York September 16 from a vacation trip begun July 9. Mr. Graef, accompanied by Mrs. Graef, went through the Yellowstone Park, thence to Alaska and back over the Canadian Pacific Railroad, spending about four weeks in Alberta in the neighborhood of Banff, from which place numerous side trips to points of interest were made, including some camping out experiences. The return then took them to Duluth and by steamer through the Great Lakes to Buffalo and so to New York.

Letters from the Trade.

Our readers are invited to discuss in these columns questions of trade interest connected with the manufacture or sale of Hardware. We shall be pleased to have a free expression of opinion on subjects deserving the attention of Hardware merchants and manufacturers.

Manufacturer's Stipulation in Paying for Jobbers' Catalogue Space.

From an Ohio Manufacturer: Referring to the matter of manufacturers contributing to the expense of getting out jobbers' catalogues, we beg to say that we are frequently asked to do this but decline in all cases, excepting those in which the jobber agrees to catalogue distinctly the brand of the goods and use our name in connection with the advertisement. Under such conditions we are willing to make a reasonable contribution.

"Donations" to Jobbers' Publicity Schemes

From a Manufacturer in Pennsylvania: We have recently been confronted with a new idea in the line of jobbers' exactions upon the manufacturer. A few jobbers at least seem to think it advisable to issue a small paper to their customers and are soliciting ads from the manufacturers. What action such jobbers will take toward a line, should the proposition be refused, we do not know.

Manufacturers' donations to jobbers' catalogues have so long been in practice that the jobber now practically makes the demand. If manufacturers are expected to contribute to all these schemes united action in defense will soon become a necessity. We have donated quite a sum of money during the past 12 months, and our entire investment is considerable. For ourselves the matter looks like graft, and from information we have from one manufacturer as to how he was made a tool to induce his competitors to enter a catalogue gotten out by the Heavy Hardware jobbers, we are compelled to say that regular and straightforward business methods are not being used.

Tactless and Obtrusive Salesmanship.

To the Editor: We, Yankee-like, want to ask questions. Various parties write soliciting orders for every conceivable kind of material a manufacturer can use, some of them frequently, some sending two requests or advertising circulars in the same mail, and after continuing this for a year or more, a small reminder asking why we do not answer their letters, and, quoting from one of them: "It seems about the limit had been reached in your case, and we respectfully suggest that we have at least an answer to this letter."

Now is this impertinence, undue freshness, or have we to detail one of the best employees in our office to answer these persisting would-be sellers of material? In any form that we can see it, it's a good deal of a nuisance.

The first catalogue received, if of any interest to us, is filed and made a reference should we be wanting goods in the line listed and illustrated. The other matter goes to the waste basket. NEW ENGLAND.

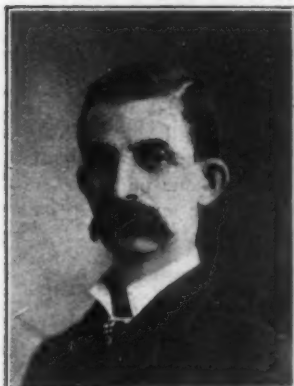
Gross and Net Profit.

To the Editor: Referring to the article on "Gross and Net Profit," in your issue of September 13, we would like to ask the author what disposition he makes of the following items of expense: Taxes, insurance, freight and cartage, advertising, heating and lighting, office expenses (such as postage, printing, telephone, &c.), bad debts and depreciation of stock. Should these not be included? If they were included, would they not largely increase the percentage of expense? CONNECTICUT.

The Board of Directors of the Southwestern Kansas & Oklahoma Implement and Hardware Dealers' Association at a meeting held at Wichita, Kan., September 5, decided to hold the next annual convention of the association at Wichita, December 11 and 13, inclusive.

WEST VIRGINIA ASSOCIATION.

IN our last issue we noted the formal organization of the West Virginia Retail Hardware Association, giving portraits of some of the officers chosen to direct the work of the association during its first year. We are now permitted to give the portraits of F. B. Clelland of Fair-



CHAS. P. MOORE.



F. B. CLELLAND.

mont and Chas. P. Moore of Ravenswood, president and second vice-president, respectively. This association has made an auspicious start, and a good proportion of the Hardware merchants of the State are already enrolled or are soon to become affiliated with it.

NEW ENGLAND IRON & HARDWARE ASSOCIATION.

ABOUT 60 members of the New England Iron and Hardware Association were guests of President Roswell M. Boutwell at the Tedesco Country Club, Swampscott, Mass., Tuesday, September 18th. This was the regular September meeting of the association, bringing the members together for the first time after the summer recess, and being the first since the election of President Boutwell he desired to make it notable and accordingly arranged this pleasant excursion without expense to the association. Members left Boston on the 2.30 p.m. train for Swampscott and were conveyed to the clubhouse a mile away, where they fully availed themselves of the opportunity to inspect this famous club, afterwards finding entertainment in various ways, including golf and tennis. Dinner was served at 6.30, the party being seated at small tables in congenial groups. At the close of the dinner a brief business meeting was held and informal remarks made, appreciative of the courtesy of the president.

KELLEY, MAUS & CO.

THE capital stock of Kelley, Maus & Co., Chicago, jobbers of Heavy Hardware, has been increased from \$500,000 to \$700,000 the company having recently expended \$150,000 in the erection of a new plant and its necessary equipment. The site is located on the west side, between Ashland avenue and the south branch of the Chicago River, and as the length of the property parallels the river, excellent facilities for the receipt and shipment of goods by water are offered, as the river is dredged to a navigable depth that will permit of the docking of the largest lake boats. The iron and steel bar warehouse is 100 x 300 ft., of steel construction throughout, and has facilities for maintaining a stock of 12,000 tons. The other building, which has the same dimensions, is of brick construction, two stories high, affording 60,000 sq. ft. of floor space. In it will be carried the stock of heavy Hardware and such woodstock as will not be carried in the woodyard. The woodyard, in which the largest stock of hardwood in the country for wagonmakers will be carried, occupies a space of 300 x 400 ft., and the material will constantly be carried under cover. The value of the stock which

the company will aim to carry is placed at \$200,000. Three side tracks connecting with the Chicago, Burlington & Quincy Railroad enter the property, making direct connection with the Chicago Terminal, which connects with all the roads running into Chicago. These spurs parallel the warehouses, the one running between them being used for the shipment of goods, while the other two, paralleling the outer sides of these warehouses, will be devoted to the receipt of material. These tracks afford room for the loading and unloading of 43 cars at a time. While the company's present warehouse at the end of the Lake Street Bridge will not be entirely abandoned, only a few floors will be occupied, and shipments of goods for local delivery alone will be made. The remainder of the warehouse will be sublet for storage purposes. The growth of the company's business, together with freight congestion in the downtown district, which interfered with the loading and unloading of cars, necessitated the erection of the new plant on a site where ample room for future extensions is provided for and transportation facilities unhampered.

A PRACTICAL PRICE CARD.

THE neat price card shown in the accompanying cut is the idea of Frank Mader, an employee of the Emmert-Conrad Company, Marysville, Ohio. The device consists of a holder made of tin with edges turned over to form a slide in which a card and glass will run easily. The latter should be cut the same size, a trifle narrower

Adrian Fence.				
Size	Cost	Post with B.W.	Post without B.W.	AT Store
16/58 wtxy	.75	.72	.60	
12/58 vlx	.60	.57	.50	
14/48 vpx	.60	.57	.50	
11/48 vlx	.50	.47	.42	
10/42 wtx	.47	.42	.32	
10/47-9 vlx	.65	.60	.55	
12/48 vlpz	.58	.55	.48	
8/28 wpx	.40	.35	.30	

Price Card Used by Emmert-Conrad Company, Devised by Frank Mader.

than the holder. A hole is punched at the top of the holder to hang it up by.

The feature of the card is that it is always clean, which is a great advantage in a Hardware store where the men are handling Bolts, Oils and many other dirty or greasy articles. Whenever there is occasion to change prices or insert a new card, it can be quickly and conveniently done. The size of the device may be varied according to the requirements of different lines, and the Emmert-Conrad Company has found it very practical on such goods as Poultry Netting, Wire Cloth, Wire Fencing, Glass, Bolts, Screws, &c.

Wallace Rankin has bought the Shelf Hardware, Stove, Paint, Sporting Goods, Implement and Vehicle business of Chanute Hardware Company Chanute, Kan.

McCue Bros., Willsonville, Neb., have sold their Hardware store, Sporting Goods and Furniture business to G. H. Travis.

TRADE WINNING METHODS.

This department is for the description of approved methods of carrying on and extending business, and a cordial invitation is given to merchants to co-operate in the effort to make it suggestive and of practical use to the trade.

EXPOSITION HARDWARE BOOTH.

THE booth illustrated herewith was one of the notable features of the Business Men's Exposition held in Haverhill, Mass., several months since. The exhibit was made in the name of the Hanscom Hardware Company of that city, the booth having been designed, built, wired and trimmed by Francis E. Thompson. The dimensions of the booth were 9½ ft. wide, 8 ft. deep and 10 ft. high. On top and partly shown in the illustration was a dome 4½ ft. in diameter, which was covered with carborundum crystals. This dome revolved, causing the crystals to



Exposition Hardware Booth.

sparkle like diamonds. On the left the background was covered with Shears and Scissors, and on the right with Butchers' Cutlery. Occupying the center was a display board of the Carborundum Company showing its products. These display boards, by the way, are furnished by the company to merchants handling the goods. On the ledge were samples of Builders' Hardware. The glass case shown contained a large carborundum crystal. The front columns were encircled with Dog Collars. Near the front edge on top of the booth were cans of Paint. The booth was brilliantly illuminated and attracted much attention from the visitors to the exhibition.

THE IMPORTANCE OF WINDOW DISPLAY.

"A GOOD window is about the best advertisement a firm can have," declares the Farrar-Welshon Hardware Company, Incorporated, Pittsburgh, Pa. The company's establishment has two windows, about 6 x 6 ft. in dimensions, one on either side of the entrance.

Tools and House Furnishings.

One window is nearly always devoted to Tools, of which a very complete line is handled. In the other seasonable House Furnishings are featured.

Both windows are changed at least once a week and are kept scrupulously clean.

The windows are lighted from the top by incandescent lamps with porcelain reflectors, thus showing the articles up to good advantage, while the light does not shine in observers' eyes.

All the Clerks Take a Hand.

The windows are trimmed and dressed by the different clerks, the work being assigned to no particular employee. In this way a healthy rivalry is created, and each clerk endeavors to excel his fellows in developing new and attractive methods of arranging the displays. The company takes advantage of the advertising helps got out by manufacturers and uses them whenever possible.

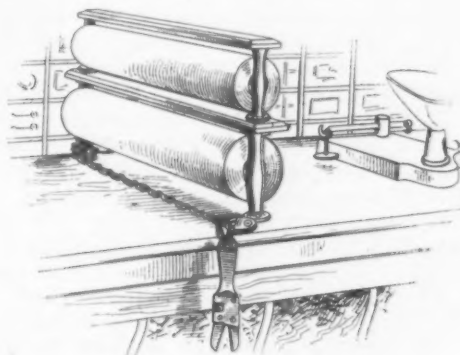
A Quarterly Pamphlet.

The company does nothing whatever in the way of newspaper advertising, but at intervals of three months issues a pamphlet containing large pages, in which attention is effectively called to many items, mostly in the way of seasonable goods. These are mailed to customers and prospective customers throughout the city.

The company also makes it a point to accompany all bills and packages with leaflets and booklets furnished by manufacturers, in which the public are reminded that the goods shown can be obtained at the store.

DEVICE FOR PROMOTING SALES.

STAR MFG. COMPANY, Carpentersville, Ill., has hit on a winning method of promoting the sale of an article of its manufacture. The idea has been applied to the Elgin Wrench made by this company, but is equally well adapted to many other pieces of goods. It consists merely in chaining up and locking the Wrench in some place where customers will be sure to notice its curious position, and wonder why it is kept in that way. Usually they will handle it and inquire about it, which is all a bright clerk needs to open the way for a sale. The company has issued a circular containing the accompanying



Wrench Chained to Wrapping Counter.

illustration, and recommending the scheme in the following breezy style:

MR. DEALER

You may laugh when we ask you to chain up an Elgin Wrench, but you will laugh again when you notice how many customers who do not come into the store to buy Wrenches take one away with them.

It's the Chain and Padlock that does the business, because customers wonder what it is chained up and locked for. They are as sure to pick it up and Handle It as a fly is to eat molasses.

The Elgin Wrench pleased you because you had your hands on it, and it will do the same to your customers, but they cannot handle it if it is in your showcase, and there is but One Place to chain it and that is where people stand to be waited on, or have their bundles wrapped. It must be chained and locked at that One Place, or it would be at every other place in the store but the right one. Try it. It will surprise you, as it did us.

I. S. Little has succeeded to the Hardware business of A. P. Reeve, Silver City, Iowa.

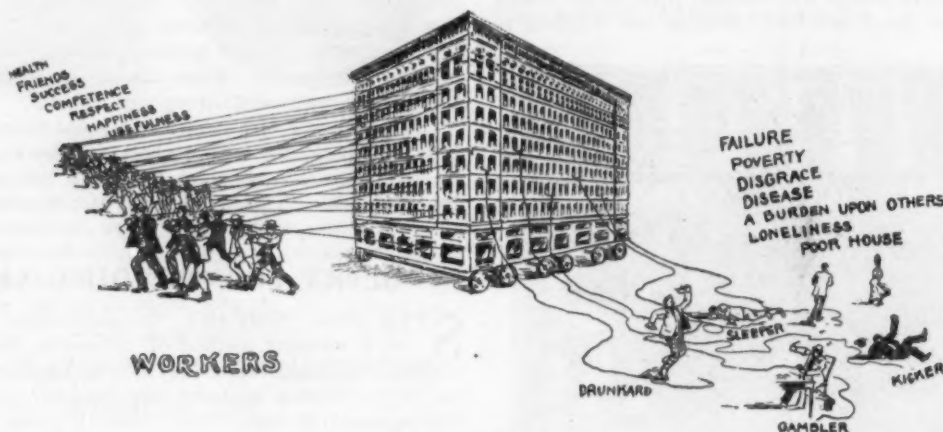
A PICTURE SERMON.

DIRECTING a force of traveling salesmen requires the highest degree of executive ability. A successful manager must not only have tact, but beyond that a genuine human sympathy, which enables him to put himself in the other man's place. With a manufacturer or jobber operating a large force, some of whom are at a distance and only get to the home office at considerable intervals, there is a tendency to treat salesmen in a cold, impersonal, not to say exacting way, which is not calculated to win their loyalty or bring out their most effective efforts. Yet it is upon such loyalty and effort that the success of the establishment depends.

A large and well-known house adopts the method of keeping in touch with its selling force by sending out at frequent intervals circular letters, in which are incorporated not only information and instructions of a gen-

New York, has recently taken the Eastern agency for the line of Plasterers' Browning and Finishing Trowels and Aluminum Hawks made by the Marshalltown Trowel Company, Marshalltown, Iowa. The Aluminum Hawks are made in three sizes—13 x 13, 13½ x 13½ and 14 x 14 in.—weighing, respectively, 26, 30 and 32 oz. The handles are detachable, and firmly secured to the under side of aluminum plate is a 4-in. flange, with hub extending ¾ in. to receive thread on handle, making an easily carried and durable Hawk, weighing about the same as wood Hawks of corresponding size. The company also represents and is carrying a stock of the Sealskin Swaty Razor Strops, made only in two sizes by the Sealskin Swaty Strop Company, Ottumwa, Iowa.

In the reference which appeared in our last issue to the Stevens Arms Advertising Contest for merchants, which is being conducted by the J. Stevens Arms & Tool



A Picture Sermon.

eral nature, but all the interesting and stimulating ideas, suggestions and experiences that come up, which would be likely to interest, entertain or encourage the outside men. Illustrations are sometimes resorted to for bringing out points in an effective way, calculated to catch the attention and fix them in the memory. One of these illustrations is reproduced herewith, emphasizing an idea which in this instance is of a more or less personal nature, referring to the dignity and the rewards of hard work. The company's establishment is represented on wheels and drawn forward resistlessly by dozens of salesmen, each tugging at his own individual line. Their efforts bring them health, friends, competence, respect and happiness. There is another group who are not pulling forward with the rest; they are sleeping, drinking, gambling and kicking. Besides being a drag upon the house and a hindrance to its success they are left behind to failure, poverty, loneliness, disease and disgrace. While the suggestion is intended primarily for thinking salesmen its stimulus and warning should come home to employees in many another field, who may find in this cartoon a large part of the secret of success in business and the explanation of many a failure.

TRADE ITEMS.

JOHN H. BAIRD of the Joseph Dixon Crucible Company, whose headquarters since 1884 have been at the New York branch, 68 Reade street, has recently changed his address to the works and general offices of the company in Jersey City, N. J., where all communications intended for him should be sent. His office there has been equipped with various labor saving and helpful devices for expeditiously handling orders, correspondence and the every day matters of a busy man. Mr. Baird has charge of the sales and advertising of fourteen States as well as the Metropolitan district, and has eight men to assist him. The company mines, imports and manufactures graphite, plumbago, black lead, pencils, crucibles, stove polish, lubricants, paints and graphite products of all kinds, with branches in leading American cities and London, England.

THE ALLERTON-CLARKE COMPANY, 97 Chambers street,

Company, Chicopee Falls, Mass., the announcement in regard to the prizes offered was in error. The fact is that 100 prizes in all are to be awarded, there being 10 first prizes, each consisting of one of the company's No. 350 Double Barrel Hammerless Shotguns; 10 second prizes, each consisting of one of the company's No. 250 Double Barrel Hammer Shotguns; 10 third prizes, &c. These 100 prizes will be given for the best and most effective advertisements of Stevens Arms appearing in the merchants' local papers during the period of the contest, August 15 to November 15. Merchants may send in as many specimens of advertisements as they desire. Information in regard to the conditions of the contest will be furnished by the company on application.

A. H. CRAIG, formerly with the American Pulley Company, has become associated with J. H. Sessions & Son, Bristol, Conn., manufacturers of Metal Stampings, Trunk Hardware, Rivets, Washers and Burrs, and will have charge of the Metal Stampings end of the business. The firm will soon occupy its new plant, which will have every facility for the manufacture of this class of product.

ISAAC NEWTON SPENCER, senior member of the Spencer Hardware Company, Keene, N. H., died on the 13th inst., in the 68th year of his age. Mr. Spencer was a native of Greenfield, Mass., and came to Keene in 1855 or 1856, obtaining employment in the old Appleton & Elliot Hardware store. In December, 1864, Mr. Spencer was taken in as a partner under the style of J. B. Elliot & Co. Three years later Mr. Elliott retired, Mr. Spencer becoming the senior partner, being associated first with the late H. H. Stone, and afterwards with G. A. Litchfield, H. A. Woodward and William O. Hutchins in the firm of Spencer & Co., which subsequently became a corporation under the name of Spencer Hardware Company. In public affairs and improvements Mr. Spencer was always ready to do his full share as well as to help those in trouble or affliction whom he believed to be deserving. For a number of years he had been treasurer of the Invalids' Home, and he was also a member of the Humane Society and of the Rural Improvement Association.

A MANUFACTURER'S ADVERTISING DEVICE.

THE accompanying illustration represents an effective advertising hanger issued by Taintor Mfg. Company, maker of the Taintor Positive Saw Set. The hanger is being distributed by John H. Graham & Co., 113 Chambers street, New York, sole selling agents for the company. It is an excellent example of the means which may be used by an enterprising manufacturer to bring a specialty to the favorable attention of the public. It is about $5\frac{1}{2} \times 9\frac{1}{2}$ in. in size, made of sheet metal and furnished with a brass chain to hang it by. The background is white, the border and lettering being embossed in red



Display Hanger of Taintor Mfg. Company.

outlined with black, while the cut, also embossed, is in the natural color of the tool. A feature of the idea is that it affords a means of showing the Saw Set itself, which is suspended from the lower edge of the sign by brass chains, as shown in the cut, thus giving the opportunity for examination and handling so necessary to rouse the interest of possible buyers and open a way for a discussion of the merits of the tool. The embossed sign can be used either with or without the suspended saw set, as the set can readily be attached or detached as the merchant may desire. The maxim, "If you like it tell others; if you don't like it tell us," is one which is used by the company, we are advised, with good effect as appealing in a somewhat unusual manner to mechanics.

PRICE-LISTS, CIRCULARS, &c.

Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our catalogue department in New York and at the same time to call attention to any new goods or additions to their lines, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.

H. H. MAYHEW COMPANY, Shelburne Falls, Mass.: Handsome catalogue of Screw Drivers, Braces, Bits, Glimlets, Countersinks, Reamers, Glass Cutters and other Tools.

HERON IRON BEDSTEAD COMPANY, Chattanooga, Tenn.: Catalogue of Iron Beds.

HIGH POINT METALLIC BED COMPANY, High Point, N. C.: Catalogue and price-list of Metallic Beds with card of enamel colors.

W. C. VOSBURGH MFG. COMPANY, 93-97 Underhill avenue, Brooklyn, N. Y.: Catalogue No. 23 containing 62 large plates illustrating electric light fixtures.

HERCULES SPECIALTY COMPANY, Erie, Pa.: Catalogue entitled "How to Get Up in the World," referring to Ladders, Stepladders, Ladder Brackets, Window Jacks, &c.; also booklet referring to Lawn Swings, Ironing Boards, Clothes Racks, &c.

O. LINDEMANN & Co., 35 and 37 Wooster street, New York: Illustrated catalogue of japanned, brass and tinned Wire Bird and Animal Cages and Cage Sundries.

FINE EXAMPLES OF IMPORTED CUTLERY.

GRAEF & SCHMIDT, 105 Chambers street, New York, sole agents in the United States and Canada for J. A. Henckels, Solingen, Germany, have just received large consignments of new examples in various kinds of fine Cutlery for the ensuing season's trade. This house makes a specialty of fine Carvers, many of which are mounted with selected stag handles, rich in color and marking, trimmed with sterling silver bolsters and caps. The caps instead of being uniform are fitted to each piece of stag, thus preserving the beauty of the handle instead of trimming it to fit a uniform cap. Another new feature is the renaissance of Buffalo horn for handle mountings. By a special process of high polishing all the minute lines and details are brought out, as is the grain of a fine hardwood by expert polishing, thus developing the actual marking, design and colors, instead of having one dull brownish color, as was customary years ago. Carvers so mounted and finished may be obtained with a line of Table, Dessert and Fruit Knives, with handles and ferrules to match. The new Carvers are made in a number of entirely new shapes of blades, and many of them have special ornamental grindings in the back, alike from both sides, for a distance of two to three inches from the handle. All the blades of the finer goods have a high, crocus polish that is frequently mistaken for nickeling. There are also Carver blades of genuine Damascus steel, with the peculiar markings of that kind of steel, not etched on with acid. In some of the Carvers, stag handled, more moderate in price, the blades have the new shapes and polish, but have neat hollow steel bolsters instead of sterling silver.

Especial attention is drawn to examples of pearl handled carver sets, particularly the size and fire in the pearl. These handles run from 4 to $4\frac{1}{2}$ in. in length, a half inch and over in thickness and up to 15-16 in. wide, which the trade will recognize as selected stock.

In manicule sets, there are many new features, more particularly in the shape and style of the cases, from those containing a pair of scissors, the bows and pivots plated with fine gold, retailing at about \$3 each, to cases with ten pieces, selling at about \$30 each. The dressed skins were specially imported from Europe, and the cases made here, some of the beautifully marked rich greens being in a class by themselves.

In Pocket Knives the run is on very thin ones for vest pocket use, with the thickness of but one blade in small Knives, being the combination of nail blade, file blade and nail scissors that will give practical service. These Knives are in gun metal, pearl, tortoise and German silver handles or scales, according to cost.

REQUESTS FOR CATALOGUES, &c.

The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM WALLACE SUPPLY COMPANY, Wallace, Idaho, which last spring embarked in the Hardware, Stove, Miners' Supply, Plumbing and Heating business.

FROM M. J. WICKERSHAM, formerly of Axtell, Neb., who has bought the Hardware business of Mason Bros., Weeping Water, Neb.

WILLIAM S. OWEN, Providence, R. I., file manufacturer, died in that city September 11, aged 52 years. He was a native of Manchester, England, and was employed by the Nicholson File Company, Providence, until he established a business for himself some ten years ago. He leaves a widow and two daughters.

THE firm of Antes & Miller, Shelby, Iowa, has dissolved, Mr. Antes retiring and W. L. Miller continuing the business under his own name.

The Hardware Merchant and the Free Alcohol Law.

(FROM OUR SPECIAL CORRESPONDENT.)

WASHINGTON, D. C., September 18, 1906.

THE Internal Revenue Bureau officials have read with much interest the editorial comments in the Hardware department of last week's issue of *The Iron Age* concerning the practical operation of the new free alcohol law and its relation to the Hardware trade. As suggested in the editorial referred to, much depends upon the restrictions imposed by the Commissioner of Internal Revenue upon the production of alcohol, but in any event the Hardware merchant is certain to be a large beneficiary of the new law.

About 500 Bushels of "Mash" Per Day.

As to the regulation of the production of denatured spirits under the new statute, the correspondent of *The Iron Age* is in position to state that the rules of the Internal Revenue Bureau, which will be promulgated on October 1, will not permit the average small farmer to make alcohol on his own premises. Production will be restricted to distilleries having a daily minimum capacity—presumably about 500 bushels of "mash" per day. Such a requirement is, of course, prohibitory as to the small farmer, but would not prevent the establishment of co-operative distilleries in which a company of farmers might utilize surplus and damaged crops from a wide area of tributary territory. In fact this feature of the development of the free alcohol policy promises to be of the highest importance, as it will permit the manufacture of alcohol in remote regions where fuel is now scarce and where the cost of gasoline is inordinately high, owing to transportation charges and lack of competition with the principal producer.

Demand Upon the Merchant.

The Hardware retailer will undoubtedly encounter within a reasonable length of time a large demand for small internal combustion Engines, Alcohol Stoves and Fittings and Alcohol Lamps. The use of this type of engine has increased enormously during the past two years, but the high cost of gasoline, which in many sections of the Far West approximates 25 cents per gallon, has restricted their sale. In a statement before the Ways and Means Committee the engineer in charge of the motive power department of the International Harvester Company stated that the present annual output of Engines averaging 8 hp. each exceeded 100,000, and added:

Already the sale of Engines in some sections of the country is rendered more difficult owing to the exorbitant price of gasoline, and yet the introduction on the farm of small explosive Engines on an extensive scale has scarcely begun. The agriculturist at the present time recognizes more than ever before the general utility of the small Engine on the farm; for example, in pumping water, grinding feed, sawing wood, operating Churns and Cream Separators, thrashing grain, shredding fodder, &c. With favorable prices on fuel its application can readily be extended to tractors, so that within a short time power driven Grain Harvesters, Mowers, Plows, Corn Harvesters, Cultivators and like implements may replace many of those in present use and thereby save the cost and keeping of an extra team.

This authority also stated that it was "an interesting and important consideration that the same Engine may, with slight modifications, which are in the nature of attachments, be rendered capable of using either a hydrocarbon oil or an alcohol fuel, so that most of the engines in present use can, with slight expense, be converted into Alcohol Engines and a unity of design followed in Engines employing different fuels."

Alcohol vs. Gasoline.

There is a popular misapprehension with regard to the efficiency of alcohol for fuel purposes. The statement has been widely circulated, presumably in the interest of petroleum producers, that there are more heat units in a gallon of gasoline than in a corresponding quantity of alcohol, and therefore that the farmer must be able to secure denatured spirits at a fraction of the

cost of gasoline in order to obtain an equally economical fuel. The fact is that the relative values of alcohol and gasoline for heat and power purposes depend not upon the number of heat units, but upon the extent to which those units can be utilized under conditions of actual practice. While there are more heat units in a gallon of gasoline than in a gallon of alcohol, the thermal efficiency (*i. e.*, the degree to which the heat units in a given quantity of fuel may be utilized) of alcohol is so much superior to gasoline as to completely offset the disparity in actual heat units.

Tests Favor Alcohol.

The results of several series of elaborate tests made during the past two or three years by the most accomplished and well-known engineers in the United States and Europe have demonstrated that for power purposes the efficiency of alcohol is fully equal, if not superior, to that of gasoline, gallon for gallon. The American representative of the Otto Gas Engine Works of Cologne, Germany, in a formal statement before the Ways and Means Committee, said:

I had occasion to take part in several shop tests made with these Alcohol Engines, which varied in size from 10 to 30 hp. The results which we obtained showed that out of an engine of a given size—that is, a given cylinder capacity—we got an average of 20 per cent. more power than out of the same size Engine operated on gasoline. This is due to the fact that alcohol, while it does not have the same heating value per volume as gasoline, the proportion being about 1 to 1.6 in favor of gasoline, it is possible to get a higher efficiency from alcohol, because it can be compressed to a much higher degree without danger of spontaneous combustion than is possible with gasoline.

The thermal efficiency—that is, the degree of utilizing all of the heating value of alcohol—is therefore much greater than that of gasoline, the figures being about 21 per cent. for gasoline as against 30 per cent. or more for alcohol. The consumption of alcohol per horsepower I found to be practically the same in volume as it was when using gasoline; that is, about one-eighth of one United States gallon per hour.

Prof. Thomson's Statement.

It would be difficult to find a higher authority on the subject of heat, light and power in the United States or Europe, than Prof. Elihu Thomson of the General Electric Company. In a carefully prepared statement before the Ways and Means Committee Professor Thomson said:

Notwithstanding the fact that the heating value of alcohol, or the number of heat units contained, is much less than that of gasoline, it is found by actual experiment that a gallon of alcohol will develop substantially the same power in an internal combustion Engine as a gallon of gasoline. This is owing to the superior efficiency of operation when alcohol is used. Less of the heat is thrown away in waste gases and in the water jacket.

The mixture of alcohol vapor with air stands a much higher compression than does gasoline and air without premature explosion, and this is one of the main factors in giving a greater efficiency. It follows from this that, with alcohol at the same price as gasoline, the amount of power developed and the cost of the power will be relatively the same so far as fuel itself is concerned, but on account of the higher efficiency of the alcohol less cooling water is required, or a less percentage of the heat of combustion is communicated to the cylinder walls of the Engine. The exhaust gases from the Alcohol Engine carry off less heat. They are cooler gases.

Economy and Safety.

The Alcohol Lamp and Cooking Stove will probably soon become popular under the new statute. A series of careful tests made for the Ways and Means Committee last winter demonstrated that the Alcohol Lamp, now largely used in France and Germany, will develop almost exactly twice the candle power per gallon of fuel as the Kerosene Lamp, so that in many sections where kerosene is now selling at 15 cents per gallon the consumer could afford to pay 30 cents for denatured spirits. These Lamps are fitted with mantles and produce an intense white light that rivals the Incandescent Electric Lamp. For use in Cooking Stoves denatured spirits will be found to be equally efficient and far safer than gasoline or kerosene. The factor of safety is one of great importance, and applies generally to the use of denatured spirits. Inasmuch as alcohol readily mixes with water and will not burn when diluted 50 per cent., a fire is readily extinguished, whereas a jet of water thrown on burn-

ing kerosene or gasoline simply serves to spread the fire and render the conflagration more disastrous.

The Question of the Cost of Denatured Spirits

is of the highest importance, and while it will probably not be practicable to realize the lowest figures at the outset, it is confidently believed that within the first year under the new law the price of spirits in barrel lots will be brought below 20 cents. For lighting purposes this would be equal to 10-cent kerosene. Congressman Hill, who accompanied Commissioner of Internal Revenue Yerkes on his recent European tour of inspection, reports that the best English practice applied to materials available in the United States would produce denatured spirits at 15 cents per gallon. In Germany denatured spirits are sold in small sealed bottles holding 1 liter—a little more than a quart—each at approximately 28 cents per gallon.

The Substitution of Denatured Spirits

for pure grain alcohol and wood alcohol for use in chafing dishes, hot water heaters, coffee makers, &c., cannot fail to be of much importance to the Hardware retailers carrying these lines of goods. Pure grain spirits, which now sell at wholesale for about \$2.30 per gallon, retail at not less than 75 cents per quart, while refined wood alcohol, wholesaling at about \$1 per gallon, retails at about 40 cents per quart. If denatured spirits could be substituted at the German price of 6 cents per quart the expansion in its use for the purposes indicated would certainly be enormous.

W. L. C.

THE ATLANTIC CITY CONVENTIONS.

ALL the indications point to a very large attendance of manufacturers and jobbers at the annual conventions of the American Hardware Manufacturers' Association and National Hardware Association, which will be held simultaneously at Atlantic City, N. J., October 17-19. It is expected that a railroad rate of a fare and a third for the round trip will be granted by the various passenger associations under the certificate plan, as heretofore.

The Manufacturers' Programme.

The programme of the Manufacturers' Association has been determined upon. There will be but two executive sessions—namely, on Wednesday afternoon and Friday morning, at the latter of which the election of officers for the coming year will take place. The main purpose in thus limiting the business sessions is to insure a full and prompt attendance. As a good deal of the work of the convention has been anticipated by correspondence and otherwise, and will be presented to the convention in the form of resolutions, which will have passed through the association's Resolution Committee and will be presented with the indorsement of that committee, it is anticipated that a good deal of business will be covered in a brief time. The list of members which will be given in connection with the programme shows that the association has added 14 names to its membership during the past year. The Executive Committee of the association has recommended all the members who contemplate giving out souvenirs to restrict the distribution of them to the hour of 5 to 6 p.m. of each day of the conventions, so as not to interfere with the business sessions.

F. D. Mitchell, secretary-treasurer, 309 Broadway, New York, requests early advices, not later than October 6, from those who desire badges for the occasion. These badges will display on celluloid the name of the wearer and the name and address of the company represented. Badges of similar design, but giving simply name and address, will be prepared for the ladies.

National Hardware Association.

The business programme of the Jobbers' Association is not yet sufficiently advanced to make definite announcement of its make-up. The annual banquet of the association will be given on Friday evening, October 19. A number of eminent speakers have accepted invitations to respond to toasts, among them being Hon. E. C. Stokes,

Governor of New Jersey, and Hon. John E. Watson, member of Congress from Indiana. On Thursday evening a card party will be given, this being in charge of Mrs. Geo. W. Trout, of Chicago, and a committee of ladies.

A convention of dealers in tin plates and metals has been called for Tuesday, October 6, the object being to consider subjects of vital importance. An invitation has been extended to all the dealers in tin plate and metals throughout the country, regardless of membership in the National Hardware Association, although the meeting will be held under the auspices of the association.

PATTERSON, GOTTFRIED & HUNTER'S NEW CATALOGUE.

PATTERSON, GOTTFRIED & HUNTER, 146-150 Centre street, New York, have just issued a compact and convenient "Dealers and Jobbers' Catalogue," No. 77, containing about 700 pages, 8 x 9½ in., covering leading lines made by manufacturers whose goods are handled by the house. The book consists of detachable leaves bound in a Morehouse catalogue cover, which permits of any number of leaves being added, changed or thrown out at will to keep the volume up to date. There are shown lines of 32 well-known makers, whose names are given at the beginning of each section, together with the manufacturers, numbers, lists and other data. Following each section are several strong quadrille ruled leaves for memoranda. The goods dealt in include Machinery, Metals, Hardware, Tools and Supplies, there being eight other catalogues to cover their line recently issued. Among the manufacturers represented in No. 77 are American Pulley Company, Brown & Sharpe Mfg. Company, J. M. Carpenter Tap & Die Company, Whitman & Barnes Mfg. Company, Billings & Spencer Company, Nicholson File Company, Diamond Saw & Stamping Company, Hill Standard Mfg. Company, Jacobs Mfg. Company, Union Hook Company and Abrasive Material Company.

STOVE CATALOGUE OF MARSHALL-WELLS HARDWARE COMPANY.

MARSHALL-WELLS HARDWARE COMPANY, Duluth, Minn., has just issued Catalogue No. 50, referring to Stoves, Ranges, Heating Outfits and Plumbing Supplies. The book is notable for its scope, covering almost every conceivable kind of Stove for wood, hard and soft coal, coke, lignite, oil, gasoline and gas. It also refers to Hot Water, Combined Air and Hot Water and Steam Boilers, Radiators, Water Supply Outfits, Closets, Lavatories, Bathtubs, Sinks, &c.

It is interesting to note that the linotype matter was set, the pages were made up, each entire page was electrotyped, and the book was printed and bound, all in the company's catalogue department located in its warehouse. The page plates are 8 x 11 in. in size. The company states that this edition is a small portion of a general loose leaf catalogue on which it has been working for over two years, and which it expects to issue about January 1.

WEST COAST OF SOUTH AMERICA BUSINESS.

THE new British steamship Dalblair has arrived at Brooklyn, N. Y., in ballast from Greenock, Scotland, to take her place on W. R. Grace & Co.'s merchants' line of regular direct steamers to the West Coast of South America, making stops from Punta Arenas in the Straits of Magellan up to Guayaquil in Ecuador. The Dalblair, built for this service, registers 3000 tons and is one of a fleet of eight steamers now plying back and forth regularly between New York and ports in Chile, Peru and Ecuador, the rest of which are even larger than this one. The steady growth of this line, as well as other lines reaching the same territory, is a sure indication of the growing importance and value of South American trade with the United States.

DEATH OF JOHN SIMONDS.

JOHN SIMONDS, president of the Simonds Saw Company, San Francisco, Cal., which is affiliated with the Simonds Mfg. Company, Fitchburg, Mass., died at the residence of his son, Ernest H. Simonds, at Berkeley, Cal., on the 8th inst. Mr. Simonds' health had been seriously impaired for two or three years and his death was not unexpected.

John Simonds was born in Fitchburg in 1838, and was a son of Abel and Jane (Todd) Simonds. He attended the public schools, including the High School, and after completing his studies he went to Winchendon, where he was employed till after the breaking out of the Civil War, when he enlisted in Company F, Twenty-fifth Massachusetts Regiment, and in addition to serving his three years' term of service he re-enlisted and served till July 13, 1865. After some years spent in a railroad office Mr. Simonds was elected treasurer of the Simonds Mfg. Company in 1874, which position he held till 1886, when he resigned and went to the Pacific Coast, where he started the Simonds Saw Company, of which he was president till his death. He also looked after the business of the Simonds Mfg. Company in San Francisco territory. Mr. Simonds was held in very high esteem by all who knew him, and the announcement of his death will bring with it a sense of personal loss to many.

MISCELLANEOUS NOTES.

New Pattern Pocket Knives.

George Wostenholm & Son, Sheffield, England, and 105 Chambers street, New York, under the management of George Quirk, have just brought out a number of new patterns, for them, of fine pocket knives, most of which are the direct result of a visit here of J. A. E. Paine, managing director of the house, about 18 months ago. Some are in thin, flat pocket knives for vest pocket use, covered with pearl or stag, in different lengths, and having two, three and four blades; also in straight pearl handles, flat styles. There are likewise new patterns with German silver handles in two, three and four blades, plain and figured scales, of which large orders have already been taken. Other late patterns, styles and sizes in jackknives are ready in two and three blades, stag handle, as well as a number of patterns in oxidized silver handles, principally in two blades, with raised figure scales.

Wateroleine.

The Acme Chemical Company, 640 Broadway, New York, is manufacturing the water lubricant, Wateroleine. This amber colored liquid oil, which flows readily in the original condition, is designed for lubricating by mixing with soft water various kinds of metal work, such as metal stamping, plain or decorative; drilling, milling, punching, tapping, threading, &c., and for cold drawing steel tubes, for threading cast iron and malleable fittings, screw cutting, &c. It is used by mixing with soft water, which instantly forms an emulsion or milk-like agent, which is easy to prepare (no heating required), is clean, free from odor, noninflammable, has great cooling effect and low cost. It is said not to gum, corrode or become rancid and is absolutely nonacid. When used on automatic screw machine or turret lathe work on brass or steel it can be mixed with 20 times its own bulk of water at ordinary temperature. As much as 50 gal. of water to 1 of Wateroleine may be used for some kinds of work.

Wizard Repeating Liquid Pistol.

Parker, Stearns & Co., 230 Water street, New York, who for several years have been manufacturing a type of liquid pistol which as it was improved was successively known as "Son of a Gun," "Oima" and "U. S. A.," for this season have put on the market the Wizard liquid pistol, which is a marked advance over its several predecessors. There are two nicked cast iron shells which when assembled by means of a screw inclose a round bulb and

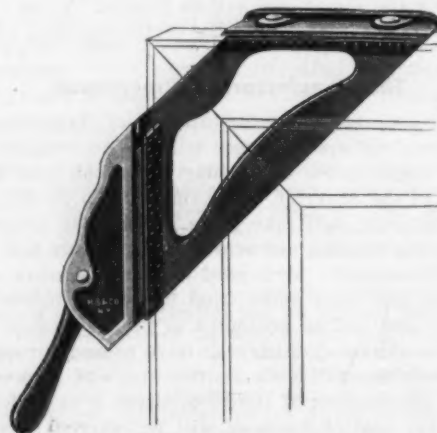
small tube of pure Para rubber in what resembles the ordinary revolving chamber of a bulldog revolver, 5 in. in extreme length. In use the muzzle of the pistol is submerged partially in water, when by pulling the trigger two or three times the air in bulb is forced out and water fills the vacuum so obtained. A similar pressure on the trigger projects a small stream of water as far as 25 to 30 feet. For shorter distances as many as 10 to 12 shots can be fired, according to the pull on trigger. The pistol can be used with plain water as a toy, or with the admixture of some substance like ammonia or capsicum in small quantities as a defense against dogs or other animals. It also makes a handy and effective weapon for women.

Voltax Compound.

Electric Cable Company, Bridgeport, Conn., and 17 Battery place, New York, is manufacturing Voltax, which is described as waterproofing compound and preservative of wood and metal, as well as a good insulating material. The manufacturer states that the compound is impervious to moisture, acids, sulphurous gases and alkalis, that it will not freeze or crack, retains its elasticity, will not corrode, prevents electrolytic action, dries out in the same time as required for ordinary paint, adheres to glass, porcelain and other smooth surfaces, and maintains uniformity in quality. Voltax may be used for painting stonework to keep moisture from sweating through, and on steam and cold water pipes as a preventive of moisture. As a paint for furnace doors and stacks it is said to withstand an exceedingly high temperature.

Automatic Miter Clamp.

Hammacher, Schlemmer & Co., Fourth avenue and Thirteenth street, New York, are offering the Automatic Miter Clamp shown in the accompanying cut. It is de-



Automatic Miter Clamp.

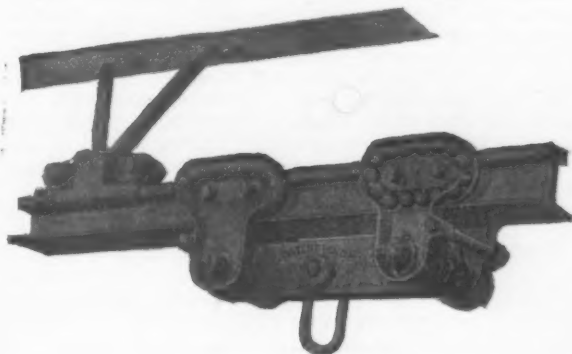
signed for the use of woodworkers and sash, blind and door manufacturers, and is described as light, compact, effective, inexpensive and practically indestructible. The makers state that the clamp takes any width or thickness of casing, whether sprung or flat, and sets in place and clamps a miter in less time than it takes to make a full turn of a screw. They also explain that it has no intricate parts to get out of order and requires no adjusting, being always in position.

SOLID STEEL TOOL & FORCE COMPANY, Brackenridge, Pa., manufacturer of car forgings, track tools, drop forgings, &c., has issued a circular referring to its line of knuckle pins and giving a list of the couplers for which they are furnished and the sizes carried in stock. It is stated that many intermediate sizes are omitted, but will be furnished when ordered in sufficient quantities. A portion of the circular is devoted to chemical analysis and other technical information calculated to demonstrate the strength of the company's product.

Overhead Trolley Track Line.

The G. & W. Mfg. Company, 26 Cortlandt street, New York, has just put on the market a new style of overhead trolley track line, patented August 7, 1906, the main portion of which is shown in the accompanying illustration. The feature of this construction is the ease and economy with which this system of trolley transmission can be installed for store, warehouse, machine shop, factory and foundry use and in similar places. Either I-beams or T-rails can be easily bolted or screwed to overhead beams, on which the trolleys of malleable iron having steel balls running in steel ball races travel back and forth. As the hangers are adjustable it is possible to easily put up and level the overhead track. There are lag joints between the tracks which prevent tracks spreading or working loose. Other advantages referred to by the company are safe and solid connection between the track and hangers, adjustable braces that can be put up at any angle, anywhere most convenient, and trolleys rounding curves easily without binding. The company also installs any

system of industrial railroad, complete with switches, curves, turntable and cars for transporting all kinds of



Overhead Ball Bearing Trolley.

goods and materials where overhead trolley cannot be used.

PAINTS, OILS AND COLORS

Animal, Fish and Vegetable Oils—		Miscellaneous—		Blue, Ultramarine.....		Black, Ivory.....	
	gal.				lb.		lb.
Linseed, City, raw.....	30 @ 30	Barytes:		Brown, Vandyke.....	11 @ 14	Lamp, Com.....	4 @ 6
City, Boiled.....	40 @ 41	White, Foreign.....	ton \$17.50@19.00	Green, Chrome.....	12 @ 16	Blue, Celestial.....	4 @ 6
State and Western, raw.....	37 @ 38	Amer. floated.....	ton 19.00@	Green, Paris.....	24 @ 24	Blue, Chinese.....	29 @ 32
Raw Calcutta Seed.....	42 @ 43	Of color, No. 2.....	ton 13.50@15.00	Sienna, Raw.....	12 @ 15	Blue, Prussian.....	27 @ 30
Lord, Extra Prime, Winter.....	69 @ 70	Chalk, in bulk.....	ton 3.00@ 3.25	Sienna, Burnt.....	12 @ 15	Blue, Ultramarine.....	4 1/2 @ 15
Extra No. 1.....	46 @ 47	In bbls.....	100 lb. .35	Umber, Raw.....	11 @ 14	Brown, Spanish.....	1/2 @ 1
No. 1.....	40 @ 44	China Clay, English.....	ton 11.00@17.00	Umber, Burnt.....	11 @ 14	Carmine, No. 40.....	\$2.90@3.00
Cotton-seed, Crude, f.o.b. mills.....	22 1/2 @ 23	Cobalt, Oxide.....	100 lb. 2.50@ 2.60			Green, Chrome, ordinary.....	3 1/2 @ 6
Summer Yellow, Prime.....	37 1/2 @ 38	Whiting, Commercial.....	100 lb. .43@ .48			Green, Chrome, pure.....	17 @ 25
Summer Yellow, off grades.....	37 @ 38	Gilders.....	100 lb. .50@ .55			Lead, Red, bbls., 1/2 bbls. and kegs:	
Sperm, Crude.....	33 @ 34	Ex. Gilders.....	100 lb. .55@ .60			Lots 500 lb. or over.....	7 1/2 @ 7 1/2
Natural Spring.....	2 @ 2					Lots less than 500 lb.....	7 1/2 @ 7 1/2
Bleached Spring.....	2 @ 2					Litharge, American, bbls.....	7 1/2 @ 7 1/2
Natural Winter.....	63 @ 65					Ocher, American.....	ton \$8.50@16.00
Bleached Winter.....	66 @ 67					American Golden.....	2 1/2 @ 3 1/2
Bleached Winter, Extra.....	68 @ 69					French.....	1 1/2 @ 2 1/2
Tallow, Prime.....	51 @ 53					Foreign Golden.....	3 @ 4
Whale, Crude.....	32 @ 33					Orange Mineral, English.....	10 @ 12
Natural Winter.....	43 @ 44					French.....	10 1/2 @ 12
Bleached Winter.....	45 @ 46					German.....	8 1/2 @ 10
Extra Bleached Winter.....	47 @ 48					American.....	8 1/2 @ 10
Menhaden, Brown, Strained.....	26 @ 29					Red, Indian, English.....	4 1/2 @ 5 1/2
Light, Strained.....	27 @ 30					American.....	3 @ 3 1/2
Bleached, Winter.....	28 @ 30					Red, Turkey, English.....	4 @ 10
Extra Bleached, Winter.....	30 @ 32					Red, Tuscan, English.....	7 @ 10
Southern.....	30 @ 32					Red, Venetian, Amer.....	100 lb. \$0.50@1.25
Cocunut, Ceylon.....	7 1/2 @ 7 1/4					English.....	100 lb. \$1.15@1.75
Cochin.....	8 1/2 @ 8 1/4					Sienna, Italian, Burnt and	
Cod, Domestic, Prime.....	30 @ 33					Powdered.....	3 @ 9 1/2
Newfoundland.....	35 @ 37					Italian, Raw, Powdered.....	3 @ 9 1/2
Red, Elaine.....	37 @ 42					American, Raw.....	1 1/2 @ 2
Red, Saponified.....	13 @ 14 1/2					American Burnt and Pow.....	1 1/2 @ 2
Olive, Italian, bbls.....	52 @ 56					Talc, French.....	ton \$17.00@25.00
Neatfoot, Prime.....	43 @ 49					American.....	ton 17.00@25.00
Palm, Logos.....	6 1/2 @ 6 1/4					Terra Alba, French.....	100 lb. .90@ 1.00
						English.....	100 lb. .80@ 1.00
Mineral Oils—		Gum Shellac—		Zinc, V. M. French, in Poppy Oil:		Turkey, Raw and Powdered.....	
	gal.				lb.		lb.
Black, 29 gravity, 25@30 cold test.....	10 1/2 @ 11 1/4	Bleached Commercial.....	47 @ 47 1/2	Lots of 1 ton and over.....	11 1/2 @ 12 1/2	Burnt, American.....	1 1/2 @ 2
29 gravity, 15 cold test.....	11 1/2 @ 12 1/2	Bone Dried.....	57 @ 59	Lots of less than 1 ton.....	13 1/2 @ 13 1/2	Raw, American.....	1 1/2 @ 2
Summer.....	10 1/2 @ 11 1/2	Button.....	40 @ 50	Zinc, V. M. French, in Poppy Oil:		Yellow Chrome.....	12 @ 14
Cylinder light filtered.....	18 @ 19	Diamond I.....	54 @ 55	Lots of 1 ton and over.....	11 1/2 @ 12 1/2	Vermilion, American Lead.....	10 @ 25
Dark filtered.....	16 @ 17	Fine Orange.....	50 @ 52	Lots of less than 1 ton.....	12 1/2 @ 12 1/2	Quicksilver, bulk.....	65 @ 66
Paraffine, 90-907 gravity.....	13 1/2 @ 14	A. C. Garnet.....	47 @ 47 1/2	Discounts—French.....		Quicksilver, bags.....	65 @ 66
903 gravity.....	12 1/2 @ 13	D. A. L. Garnet.....	45 @ 45 1/2	to buyers of 10 bbl. lots of one or mixed		English, Import.....	65 @ 70
883 gravity.....	10 1/2 @ 10 1/4	O. C.....	58 @ 60	grades, 1 1/2; 25 bbls., 2%; 50 bbls., 4%.		Chinese.....	\$0.90@1.00
Red.....	12 1/2 @ 14	Octagon B.....	52 @ 52				
		T. N.....	47 @ 49 1/2				
		V. S. O.....	55 @ 55				
Colors in Oil—		Dry Colors—					
	lb.		lb.				
Black, Lampblack.....	12 @ 14	Black, Carbon.....	5 @ 10				
Blue, Chinese.....	36 @ 46	Black Drop, American.....	4 @ 6				
Blue, Prussian.....	32 @ 36	Black Drop, English.....	5 @ 15				

THE IRON AGE

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

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Current Hardware Prices.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33% @ 33% & 10% signifies

that the price of the goods in question ranges from 33% per cent. discount to 33% and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued May, 1906, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters, Blind—

Domestic, $\frac{1}{2}$ doz. \$3.00.....33%
North's.....10%
Zimmerman's—See Fasteners, Blind.

Window Stop—

Ives' Patent.....35%
Taplin's Perfection.....35%

Ammunition—See Caps, Cartridges, Shells, &c.

Anvils—American—

Eagle Anvils..... $\frac{1}{2}$ lb. T. @ 74¢
Hay-Budden, Wrought.....94¢
Trenton..... $\frac{1}{2}$ lb. D. @ 94¢

Imported—

Peter Wright & Sons, $\frac{1}{2}$ lb. D. 84 to 340
lb. 11¢; 350 to 600 lb. 11¢.

Anvil, Vise and Drill—

Millers Falls Co., \$18.00.....15¢10%

Apple Parers—See Parers, Apple, &c.

Aprons, Blacksmiths'—

Livingston Nail Co.....33%4

Augers and Bits—

Com. Double Spur.....75¢75¢5%

Jennings' Patn., reg. Anish.....50¢10%

Black Lip or Blued.....60¢10%

Boring Mach. Augers.....70¢10%

Car Bits, 12-in. twist.....50¢10%

Ford's Auger and Car Bits.....40¢5%

Forstner Pat. Auger Bits.....25%

C. E. Jennings & Co.:
No. 10 ext. lip, R. Jennings' list.....25%

No. 30, R. Jennings' list.....40¢74¢

Russell Jennings.....25¢10¢2%

L'Hommedieu Car Bits.....15%

Mayhew's Countersink Bits.....15%

Miller's Falls.....50¢28¢74¢

Pugh's Black.....20%

Pugh's Jennings' Pattern.....20%

Snell's Auger Bits.....20%

Snell's Bell Hangers' Bits.....20%

Snell's Car Bits, 12-in. twist.....20%

Wright's Jennings' Bits.....50%

Bit Stock Drills—

See Drills, Twist.

Expansive Bits—

Clark's small, $\frac{1}{8}$ in. large, 36.....50¢10%

Clark's Pattern, No. 1, $\frac{1}{2}$ doz. 36.....20%

No. 2, 18.....60¢10¢10%

Ford's, Clark's Pattern.....20%

C. E. Jennings & Co., Steer's Pat.....25%

Swan's.....20%

Gimlet Bits—

Common Dble. Cut.....\$3.00@3.25

German Pattern, Nos. 1 to 10,
\$1.60; 11 to 13, \$5.75

Hollow Augers—

Bonney Pat., per doz. 15.50@16.00

Amos.....25¢10%

Universal.....20%

Wood's Universal.....25%

Ship Augers and Bits—

Ship Augers.....45¢45¢

Ford's.....35¢45%

C. E. Jennings & Co.:
L'Hommedieu's.....15%

Watrous'.....35¢47%

Snell's.....40%

Awl Hfts—See Handles, Mechanics' Tool.

Awls—

Brad Awls:
Handled.....gro. \$2.75@3.00

Unhlded, Shldered.....gro. \$3.50@4.00

Unhanded, Patent.....gro. \$6.00@7.00

Peg Awls:
Unhanded, Patent.....gro. \$1.25@1.40

Unhlded, Shldered.....gro. \$1.50@1.70

Scratch Awls:
Handled, Com.....gro. \$1.50@1.60

Handled, Socket.....gro. \$1.10@1.20

Awl and Tool Sets—See Sets, Awl and Tool.

Axes—

Single Bit, base weights:
First Quality.....\$4.75@5.00

Second Quality.....\$1.25@1.50

Double Bit, base weights:
First Quality.....\$7.00@7.50

Second Quality.....\$5.50@6.75

Axle Grease—
See Grease, Axle

Axles—
Iron or Steel

Concord, Loose Collar.....\$4.00@4.50

Concord, Solid Collar.....\$4.00@4.50

No. 1 Common, Loose.....\$4.00@4.50

No. 1 $\frac{1}{2}$ Com., New Styles.....\$4.40

No. 2 Solid Collar.....\$4.40

Half Patent:
Nos. 7, 8, 11 and 12.....75¢75¢5%

Nos. 13 to 14.....70¢10¢75¢5%

Nos. 15 to 19.....75¢10¢75¢10¢5%

Nos. 19 to 22.....75¢10¢75¢10¢5%

Boxes, Axle—

Common and Concord, not turned
lb., 5¢@5¢

Common and Concord, turned
lb., 5¢@6¢

Half Patent.....lb., 8¢@9¢

Bait— Fishing—

Hendryx:
A Bait.....20%

B Bait.....25%

Competitor Bait.....20¢5%

Balances— Sash—

Caldwell new list.....50%

Pullman.....50¢10¢60%

Spring—

Spring Balances.....50¢10¢60%

Chatillon's:
Light Spg. Balances.....50¢10%

Straight Balances.....40¢50%

Circular Balances.....50¢10%

Large Dial.....30%

Barb Wire—See Wire, Barb.

Bars— Crow—

Steel Crowbars, 10 to 40 lb.
per lb., 3¢@3¢4

Towel—

No. 10 Ideal, Nickel Plate..... $\frac{1}{2}$ gro. \$5.50

Beams, Scale—

Scale Beams.....10¢10¢50%

Chatillon's No. 1.....30%

Chatillon's No. 2.....40%

Beaters, Carpet—

Holt-Lyon Co.:
No. 12 Wire Coppered $\frac{1}{2}$ doz. \$0.85;

Tinned.....\$1.00

No. 11 Wire Coppered $\frac{1}{2}$ doz. \$1.10;

Tinned.....\$1.20

No. 10 Wire Galvanized $\frac{1}{2}$ doz. \$1.75

Western W. G. Co.:
No. 1 Electric..... $\frac{1}{2}$ doz. \$7.80

No. 2 Buffalo..... $\frac{1}{2}$ doz. \$9.00

No. 3 Perfection Dust..... $\frac{1}{2}$ doz. \$8.00

Egg—

Holt-Lyon Co.:
Holt, per doz., No. 1, Jap'd,
\$1.20; No. 1, Tin'd, \$1.50; No.
2, Jap'd, \$2.00; No. 2, Tin'd,
\$2.25.

Lyon, Jap'd, per doz., No. 2,
\$1.25; No. 3, \$1.50.

Taplin Mfg. Co.:
Improved Dover, per gro. No. 60,
\$8.00; No. 75, \$6.50; No. 100, \$7.00;

No. 102, Tin'd, \$8.50; No. 150,
Hotel, \$15.00; No. 152, Hotel
Tin'd, \$17.00; No. 200, Tumbler,
\$8.50; No. 202, Tumbler, Tin'd,
\$9.50; No. 300, Mammoth, per
doz., \$25.00.

Turner & Seymour Mfg. Co.:
T. & S. Dover.....\$6.00

Western, W. G. Co., Buffalo.....\$7.00

Wonder (B. M. Co.) $\frac{1}{2}$ gro. net, \$6.00

Bellows—

Blacksmith, Standard List.....
60¢10¢60¢10¢45%

Hand—

Inch. 8 7 8 9 10

Doz.....\$4.75 5.70 6.65 7.60 8.55

Molders—

Inch. 9 10 11 12 14

Doz.....\$8.00 9.00 10.00 12.50 14.50

Bells— Cow—

Ordinary Goods.....75¢45¢75¢10¢5%

High grade.....70¢10¢75%

Jersey.....75¢10%

Texas Star.....50%

Door—

Abbe's Gong.....45%

Barton Gong.....50%

Home, R. & E. Mfg. Co.'s.....55¢10%

Trip Gong.....50¢10¢80¢10¢5%

Yankee Gong.....30%

Hand—

Polished, Brass.....60¢10%

White Metal.....60%

Nickel Plated.....50¢10¢60%

Seals.....80¢60¢74%

Cone's Globe Hand Bells.....33%45%

Silver Chime.....35%

Miscellaneous—

Farm Bells.....lb. \$4.4

Church and School.....50¢10¢60%

American Tube & Stamping Co.
Gongs.....75%

Table Call Bells.....50¢50¢10%

Belting— Leather—

Extra Heavy, Short Lap.....60¢45%

Regular Short Lap.....60¢10¢45%

Standard.....70%

Light Standard.....70¢45%

Cut Leather Lacing.....50%

Leather Lacing Sides, per sq. ft.
25¢

Rubber—

Agricultural (Low Grade).....
75¢(75¢5%

Common Standard.....70¢70¢10%

Standard.....60¢45¢60¢10%

Extra.....60¢10¢45%

High Grade.....60¢5¢50¢10%

Bench Stops—

See Stops, Bench

Benders and Upsetters, Tire—

Detroit Perfected Tire Bender.....40%

Detroit Stoddard's Lightning Tire
Upsetters, No. 1, \$4.25; No. 2, \$7.25;

No. 3, \$10.50; No. 4, \$16.25; No. 5,
\$20.50.

Green River Tire Benders and Up-
setters.....20%

Bicycle Goods—

John S. Leng's Son & Co.'s 1906 list:
Chain, Parts, Spokes.....50%

Tubes.....60%

Bits—

Auger, Gimlet, Bit Stock Drills,
&c.—See Augers and Bits.

Blocks— Tackle—

Common Wooden.....70¢10¢75%

Hartz St. Tackle Blocks.....50¢45%

B. & L. Co.:
Boston Wood Snatch, 50%; Eclipse
Steel, 75%; Hollow Snatch, 50¢10%;

Star Wire Rope, 50%; Tarbox Metal
Snatch, 50%; Tarbox New Style
Steel, 50¢10%; Wire Rope Snatch,
50%.

Lane Patent Automatic Lock and
Junior.....30%

Stowell's Novelty, Mal. Iron.....50%

Stowell's Loading.....50¢10%

See also Machines, Hoisting.

Boards, Stove—

Zinc, Crystal, &c.....40%

Paper Embossed.....40¢10%

Boards, Wash—

See Washboards.

Bobs, Plumb—

Keuffel & Esser Co.....30¢45%

Boils—

Carriage, Machine, &c.—
Common Carriage (cut thread);
 $\frac{1}{2}$ x 6 and smaller.....75¢

Larger and Longer.....65¢45%

Phila. Eagle \$3.00 list May 24, '99

Bolt Ends, list Feb. 14, '95.....
65¢10¢—%

Machine, $\frac{1}{2}$, $\frac{3}{4}$ and smaller
75¢—%

Machine, larger and longer.....
65¢45¢—%

Door and Shutter—

Cast Iron Barrel, Japanned,
Round Brass Knob:
Inch. 3 4 5 6 8

Per doz. 1.30 1.35 1.45 1.60 1.80

Cast Iron Spring Foot, Jap'd,
Inch. 6 8 10

Per doz. 1.20 1.50 2.25

Cast Iron Chain, Flat, Japanned:
Inch. 6 8 10

Per doz. 1.00 1.40 1.65

Cast Iron Flat Shutter, Jap'd,
Brass Knobs:
Inch. 6 8 10

Per doz. 1.00 1.35 1.55

Wrought Barrel Jap'd.....80¢10%

Barrel Bronzed.....50¢50¢10%

Spring.....70¢10¢70¢10¢10%

Shutter.....50¢45¢50¢10¢45%

Square Neck.....75¢75¢10%

Square.....65¢45¢65¢45¢10%

Gautier, Blunt, 404¢; Sharp, 404¢
Perkins, Blunt, 404¢; Sharp, 404¢

Can Openers—

See Openers, Can.

Cans, Milk—

Illinois Pattern.....\$1.35 1.85 2.05 each.
New York Pattern.....1.50 2.20 2.45 each.
Baltimore Pattern.....1.50 2.20 2.45 each.
Dubuque.....1.35 1.60 1.75 each.

Cans, Oil—

Buffalo Family Oil Cans:
5 10 gal.
\$18.00 60.00 125.00 gro. net.

Caps, Percussion—

Eley's E. B.....50¢
G. D.....per M 34¢
G. L.....per M 40¢
G. E.....per M 40¢
Musket.....per M 60¢

Primers—

Berdan Primers, \$2 per M.....50¢
B. L. Caps (Sturtevant Shell).....50¢
\$2 per M.....50¢
All other primers per M \$1.50@1.60

Cartridges—

Blank Cartridges:
32 C. F., \$5.50.....104¢
38 C. F., \$7.00.....104¢
22 cal. Rim, \$1.50.....104¢
32 cal. Rim, \$2.75.....104¢
B. B. Caps, Con. Ball, Swg. \$1.90.....14¢
B. B. Caps, Round Ball.....14¢
Central Fire.....25¢
Target and Sporting Rifle.....15¢
Primed Shells and Bullets.....15¢
Rim Fire, Sporting.....50¢
Rim Fire, Military.....15¢

Casters—

Bed.....70¢
Plate.....60¢
Philadelphia.....75¢
Acme, Ball Bearing.....33¢
Boss.....70¢
Boss Anti-Friction.....70¢
Gem (Roller Bearing).....80¢
Martin's Patent (Phoenix).....45¢
Standard Ball Bearing.....30¢
Tucker's Patent low list.....30¢
Yale (Double Wheel) low list.....50¢

Cattle Leaders—

See Leaders, Cattle.

Chain, Coil—

American Coil, Straight Link:
5-16 1/4 5-16 3/4 7-16 1/4 9-16
\$2.70 5.90 4.95 4.20 4.05 3.95 3.90
3/8 3/4 1/2 1 1/4 1 1/2 1 3/4 inch.
\$3.85 3.70 3.65 3.80
German Coil.....60¢

Halter—

Halter Chains.....60¢
German Pattern Halter Chains,
list July 24, '97.....60¢
Covert Mfg. Co.....30¢

Cow Ties—

See Halters and Ties.

Trace, Wagon, &c.—

Traces, Western Standard: 100 pr.
6 1/2-8-3, Strght, with ring \$25.00
6 1/2-8-2, Strght, with ring \$26.00
6 1/2-8-2, Strght, with ring \$30.00
6 1/2-10-2, Strght, with ring \$35.00

NOTE—Add 2c per pair for Hooks.
Twist Traces: add per pair for Nos. 2
and 3, 2c; No. 1, 3c; No. 4, to price of
Straight Link.

Eastern Standard Traces, Wag-
on Chain, &c.....60¢

Miscellaneous—

Jack Chain, list July 10, '93:
Iron.....60¢
Brass.....60¢
Safety Chain.....70¢
Gal. Pump Chain.....10¢
Covert Mfg. Co.:
Breast, Halter, Heel, Rein, Stal-
lion.....40¢
Oneida Community:
Am. Dog Leads and Kennel Chains.....40¢
Niagara Dog Leads and Kennel
Chains.....40¢
Wire Goods Co.:
Dog Chain.....70¢
Universal Dbl.-Jointed Chain.....50¢

Chain and Ribbon, Sash—

Oneida Community:
Copper Chain, 60¢; Steel Chain, 60¢
Pullman:
Bronze Chain, 60¢; Steel Chain, 60¢
Sash Chain Attachments, per set, \$4
Aluminum Sash Ribbon, per 100
ft.....\$1.25@1.30
Sash Ribbon Attachments, per set, \$4

Chalk—(From Jobbers.)

Carpenters' Blue.....gro., 45¢
Carpenters' Red.....gro., 40¢
Carpenters' White.....gro., 35¢
Some jobbers sell at lower prices
than above.

Checks, Door—

Bardsley's.....45¢
Pullman, per gro.....\$5.40
Russwin.....40¢

Chests, Tool—

American Tool Chest Co.:
Boys' Chests, with Tools.....55¢
Youths' Chests, with Tools.....40¢
Gentlemen's Chests, with Tools.....30¢
Farmers', Carpenters', etc., Chests,
with Tools.....20¢

Machinists' and Pipe Fitters'

Chests, Empty.....50¢
Tool Cabinets.....50¢
C. E. Jennings & Co.'s Machinists'
Tool Chests.....33¢@10¢

Chisels—

Socket Framing and Firmer
Standard List.....75¢
Buck Bros.....30¢
Charles Buck Edge Tool Co.....30¢
C. E. Jennings & Co.:
Socket Firmer No. 10.....60¢
Socket Framing No. 15.....60¢
Swan.....75¢
L. & I. J. White Co.....30¢@30¢

Tanged—

Tanged Firmers.....\$3 1-3¢
Ruck Bros.....30¢
Charles Buck Edge Tool Co.....30¢
C. E. Jennings & Co. Nos. 191, 181, 35
L. & I. J. White Co.....25¢

Cold—

Cold Chisels, good quality.....13¢
Cold Chisels, fair quality.....11¢
Cold Chisels, ordinary.....9¢

Chucks—

Almond Drill Chucks.....35¢
Almond Turret Six-Tool Chuck.....35¢
Beach Pat., each \$8.00.....35¢
Empire.....25¢
Blacksmiths'.....25¢
Jacobs' Drill Chucks.....25¢
Pratt's Positive Drive.....25¢
Skinner Patent Chucks.....40¢
Universal Lathe Chucks.....40¢
Universal Reversible Jaws.....40¢
Combination, Reversible Jaws.....40¢
Drill Chucks, New Model, 25¢
Standard, 40¢; Skinner Pat., 25¢
Positive Drive.....35¢
Planer Chucks.....35¢
Face Plate Jaws.....40¢
Standard Tool Co.:
Improved Drill Chuck.....45¢
Union Mfg. Co.:
Combination, Nos. 1, 2, 3, 4, 5, 6,
7, 8 and 11, 40¢; No. 21.....35¢
Scroll Combination, Nos. 32 and
34.....30¢
Geared Scroll, Nos. 33, 34 and 35.....30¢
Independent Iron, Nos. 18 and 318.....30¢
Independent Steel, No. 64.....30¢
Union Car Drill, Nos. 000, 101,
103.....30¢
Universal, 12, 16, 17, 13, 14, 15, 40¢
Universal, No. 42.....35¢
Iron Face Plate Jaws, Nos. 23, 30,
48 and 50.....40¢
Steel Face Plate Jaws, Nos. 70 and
72.....35¢
Westcott Patent Chucks.....50¢
Lathe Chucks.....50¢
Little Giant Auxiliary Drill.....50¢
Little Giant Double Grip Drill.....50¢
Little Giant Drill, Improved.....50¢
Oneida Drill.....50¢
Scroll Combination Lathe.....50¢

Clamps—

Adjustable, Hammer.....20¢
Carriage Makers', P. S. & W.
Co.....40¢
Besly, Parallel.....33¢
Lineman's, Utica Drop Forge & Tool
Co.....40¢
Wood Workers' Hammer.....40¢
Saw Clamps, see Vices, Saw Filers'

Cleaners, Drain—

Iwan's Champion, Adjustable.....55¢
Iwan's Champion, Stationary.....45¢

Sidewalk—

Star Socket, All Steel.....\$4.05 net
Star Shank, All Steel.....\$3.24 net
W. C. Shank, All Steel.....\$3.00
7 1/2 in., \$3.00; 8 in., \$3.25

Cleavers, Butchers—

Foster Bros.....30¢
Fayette R. Plumb.....30¢
L. & I. J. White Co.....30¢

Clippers, Horse and Sheep—

Chicago Flexible Shaft Company:
28 Chicago Horse, each.....\$6.75
1920 Chicago Horse, each.....\$10.75
20th Century Horse, each.....\$5.00
Lightning Belt Horse, each.....\$15.00
Chicago Belt Horse, each.....\$20.00
Stewart's Enclosed Gear
Horse, each.....\$1.75
Stewart's Patent Sheep Shear-
ing Machine, each.....\$12.75

Clips, Axle—

Regular Styles, list July 1, '05.80%

Cloth and Netting, Wire

—See Wire, &c.

Cocks, Brass—

Hardware list:
Plain Bibbs, Globe, Kerosene,
Racking, Liquor, Bottling,
&c.....70¢
Compression Bibbs.....65¢

Coffee Mills—

See Mills, Coffee.

Collars, Dog—

Nickel Chain, Walter B. Stevens &
Son's list.....40¢
Leather, Walter B. Stevens & Son's
list.....40¢

Combs, Curry—

Metal Stamping Co.....60%

Compasses, Dividers, &c.

Ordinary Goods.....70¢
Bemis & Call Hdw. & Tool Co.:
Dividers.....65¢
Callipers, Double, 65¢; Inside or
Outside.....65¢
Callipers, Wing.....40¢
Compasses.....50¢
Wm. Schellhorn Co.:
Excelsior Dividers.....60¢
Lodi Dividers.....75¢

Conductor Pipe—

L. C. L. to Dealers:

Territory: Galvanized
Galv. Charcoal Copper.
Steel. Iron. 14, 16&20 oz.

Eastern: 60¢
Central: 60¢
Western and Southern: 60¢
So. Western: 60¢

Galvanized, 1/2 in. 60¢
Galvanized, 3/4 in. 60¢
Galvanized, 1 in. 60¢
Galvanized, 1 1/4 in. 60¢
Galvanized, 1 1/2 in. 60¢
Galvanized, 1 3/4 in. 60¢
Galvanized, 2 in. 60¢
Galvanized, 2 1/4 in. 60¢
Galvanized, 2 1/2 in. 60¢
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Extractors, Lemon Juice**Fasteners, Blind—**
—See Squeezers, Lemon.Zimmerman's 50&10%
Wauing's 40&10%**Cord and Weight—**

Ives 33%

Faucets—Cork Lined 50&10&10%
Metallic Key, Leather Lined 60&10&70%Red Cedar 40&10&50%
Petroleum 70&10&75%B. & L. B. Co.:
Metal Key 60&10%
Star 60%
West Lock 50&10%John Sommer's Peerless Tin Key 40%
John Sommer's Boss Tin Key 40%
John Sommer's Victor Mtl. Key 50&10%John Sommer's Duplex Metal Key 40%
John Sommer's Diamond Lock 40%
John Sommer's I. X. L. Cork Lined 50%John Sommer's Reliable Cork Lined 50&10%
John Sommer's Chicago Cork Lined 60%
John Sommer's O. K. Cork Lined 50%John Sommer's No. Brand, Cedar 50%
John Sommer's Perfection, Cedar 40%
McKenna, Brass:Burglar Proof, N. P. 25%
Improved, 3/4 and 1/2 inch 25%Self Measuring:
Enterprise, 3/4 doz. 40&10%
Lane's, 3/4 doz. 40&10%National Measuring, 3/4 doz. 36&10%
Felloe Plates—
See Plates, Felloe.**Files— Domestic—**List revised Nov. 1, 1899.
Best Brands 70&10&75&10%
Standard Brands 75&10&75&10%
Lower Grade 75&10&10&80&10%**Imported—**Stubs' Tapers, Stubs' List, July
24, '97 33-1-3&40%**Fixtures, Fire Door—**Richards Mfg. Co.:
Universal, No. 103; Special, No. 104 \$3.75
Fusible Links, No. 96 50%
Expansion Bolts, No. 107 60&10%**Grindstone—**Inch 15 17 19 \$1
Per doz. \$3.25 3.75 4.25 4.75
P. S. & W. Co. 30&10&40%
Reading Hardware Co. 60%
Stowell's Giant Grindstone Hanger 40%
Stowell's Grindstone Fixtures, Extra
Heavy, 50&10&10%; Light 60&10%**Fodder Squeezers—**

See Compressors.

Forks—NOTE.—Manufacturers are
selling from the list of September
1, 1904, but many jobbers are still
using list of August 1, 1899, or
selling at net prices.Iowa Dig-Ezy Potato 60&10%
Victor, Hay 60&15&25%
Victor, Manure 60%
Victor, Header 60%
Champion, Header 60%
Champion, Manure 60&15&25%
Columbia, Hay 60&20%
Columbia, Manure 70%
Columbia, Spading 70&12%
Haweye Wood Barley 60&10%
W. & C. Potato Digger 60&10%
Achs Hay 60&20%
Acme Manure, 4 tine 60&10&5%
Dakota Header 60&20%
Jackson Steel Barley 60&20%
Kansas Header 60%
W. & C. Favorite Wood Barley 40%
Plated—See Spoons.**Frames— Saw—**White, 8'g't Bar, per doz. 75&80¢
Red, 8'g't Bar, per doz. \$1.00&1.25
Red, Dbl. Brace, per doz. \$1.40&1.50**Freezers, Ice Cream—**Qt. 1 2 3 4 5
Each \$1.30 \$1.60 \$1.90 \$2.20 \$2.50**Fruit and Jelly Presses—**

See Presses, Fruit and Jelly.

Fry Pans—See Pans, Fry.**Fuse—**Per 1000 Feet.
Hemp \$2.75
Cotton 3.20
Waterproof Sgl. Taped. 3.65
Waterproof Dbl. Taped. 4.40
Waterproof Tpl. Taped. 5.15**Gates, Molasses and Oil—**

Stebbins' Pattern 80&10%

Gauges—Marking, Mortise, &c. 50&10&10%
Chapin-Stephens Co.:
Marking, Mortise, &c. 50&10&10%
Scholl's Patent 50&10&10%
Door Hangers 50&10&10%
Diston's Marking, Mortise, &c. 67%
Rabbit Gauge 30%
Marking and Mortise 30%
Wire, Brown & Sharpe's 25%
Wire, Morse's 25%
Wire, P. S. & W. Co. 37%&10%**Gimlets— Single Cut—**Numbered assort-
ments, per gro.Nail, Metal, No. 1, \$2.00; 2, \$2.30
Spike, Metal, No. 1, \$4.00; 2, \$4.30
Nail, Wood Handled, No. 1,
\$2.50; 2, \$2.60Spike, Wood Handled, No. 1,
\$4.50; 2, \$4.60**Glass, American Window**

See Trade Report.

Glasses, Level—

Chapin-Stephens Co. 60&10&10%

Glue, Liquid Fish—Bottles or Cans, with Brush 25&10&50%
International Glue Co. (Martin's) 40%**Grease, Axle—**Common Grade gro. \$4.50&6.00
Dixon's Everlasting, 10-lb pails, ea.
85¢; in boxes, 3 doz., 1 lb. \$1.20;
2 lb. \$2.00
Helmet Hard Oil 25%**Griddles, Soapstone—**

Pike Mfg. Co. 33%&33%&10%

Grindstones—Bicycle Emery Grinder \$6.50
Bicycle Grindstones, each \$2.50&3.00
Pike Mfg. Co.:
Improved Family Grindstones,
per inch, 3/4 doz. \$2.00 } 25%
Pike Mower and Tool Grinder,
each \$6.00 } 25%**Grips, Nipple—**

Perfect Nipple Grips 40&10&2%

Halters and Ties—

Cott. Ties 60&10&60&10&5%

Cover Mfg. Co.:
Web 45%
Jute Rope 45%
Sisal Rope 33%
Cotton Rope 45%
Hemp Rope 45%
Oneda Community:
Am. Coil and Halters 40&40&5%
Am. Cow Ties 45&50%
Niagara Coil and Halters 45&50&5%**Hammers—**Handled Hammers—
Heller's Machinists' 40&10&40&10%
Heller's Farriers 40&10&40&10%
Magnetic Tack, Nos. 1, 2, 3, \$1.25;
\$1.50, \$1.75 50%
Peck, Stow & Wilcox, Steel 50%
Fayette R. Plumb:
Plumb, A. E. Nail 33%&33%&10%
Engineers' and R. S. Hand 50&7%&50&10&1%
Machinists' Hammers 50&50&50&10&5%
Living and Timmers' 40&2%&40&10&2%**Heavy Hammers and Sledges—**Under 3 lb., per lb., 60¢ 80&10%
3 to 5 lb., per lb., 40¢ 80&10%
Over 5 lb., per lb., 30¢ 80&10%
Wilkinson's Smiths' lb. 9%&10%**Handles—**Agricultural Tool Handles
Are, Pick, &c. 60&10&60&10&5%
Hoe, Rake, &c. 45&50%
Fork, Shovel, Spade, &c. 45&50%
Long Handles 45&50%
D Handles 50&50&5%**Cross-Cut Saw Handles—**Atkins' 40%
Champion 50%
Disston's 50%**Mechanics' Tool Handles—**Auger, assorted gro. \$2.50&3.00
Brad Axl. gro. \$1.65&1.75
Chisel Handles, Ass'd, per gro.:
Tanged Firmer, Apple, \$2.40;
\$2.65; Hickory \$2.15&2.40
Socket Firming, Apple, \$1.75;
\$1.95; Hickory \$1.45&1.60
Socket Framing, Hickory, \$1.60&1.75File, assorted gro. \$1.80&1.90
Hammer, Hatchet, &c. 60&10&60&10&5%Hand Saw, Unvarnished, doz.
80&85¢; Not Varnished, 65&75¢
Plane Handles:
Jack, doz. 30¢; Jack, Bolted 75¢
Fore, doz. 45¢; Fore, Bolted 90¢
Chapin-Stephens Co.:
Carving Tool 40&10&10%
Chisel 65&65&10%
File and Axl. 65&65&10%
Saw and Plane 40&40&10%
Screw Driver 40&40&10%
Miers Falls Adl. and Ratchet Auger
Handles 54&10%
Nicholson Simplicity File Handle
per gro. \$0.85&1.50**Hangers—**NOTE.—Barn Door Hangers are generally
quoted per pair, without track,
and Parlor Door Hangers per double set
with track, &c.Allith Mfg. Co.:
Reliable, No. 1; Allith, No. 3; Al-
lith Adjustable, No. 6; Reliable
Parlor Door 50%**Chicago Spring Butt Co.:—**Friction 25%
Oscillating 25%
Big Twin 25%Chisholm & Moore Mfg. Co.:
Baggage Car Door 50%
Elevator 30%
Railroad 50%Cronk & Carrier Mfg. Co.:
Loose Axle 60&10%
Roller Bearing 70%Griffin Mfg. Co.:
Solid Axle, No. 10, \$12.00 70%
Roller Bearing, No. 11, \$15.00, 70%
Roller Bearing, Ex. Hy., No. 22, \$18.00 70%

Hinged Hangers, \$16.00 60&10%

Lane Bros. Co.:
Parlor, Ball Bearing, \$1.00;
Standard, \$3.15; No. 105, \$2.85;
New Model, \$2.80; New Cham-
pion \$2.25Barn Door, Standard 60&5%
Hinged net \$6.40
Covered 60&2%
Special 70&5%Lawrence Bros.:
Advance and Sterling 60&10%
Cleveland and Peerless 75%
Clipper, No. 19 60%
Crown 60&10%Easy Parlor Door, Dbl. Sets,
\$2.50; Single Sets, \$1.25 60&5%
Hummer 70&5%
New York 60&10%McKinney Mfg. Co.:
No. 1, Special, \$15 60&10%
No. 2, Standard, \$18 60&10%Hinged Hangers, \$16 50%
Meyers' Stayon Hangers 60&5%Richards Mfg. Co.:
Hangers, Nos. 47, 48, 147, 247,
60&5%
Pioneer Wood Track No. 3, \$2.00
Ball B'r's St'l Track No. 10, \$5.00&10%
Roller B'r's St'l Track No. 12, \$2.15
Roller B'r's St'l Track No. 13, \$2.30
Roller B'r's, Nos. 39, 41, 43,
70&10%Hero, Adj. Track No. 19, 50&10%
Adjustable Track Tandem Trol-
ley Track No. 16 50&10%
Seat Steel Track No. 8 45%
Auto Adj. Track No. 22, 50&10%
Trolley B. D. No. 17, \$1.25; F.
D. No. 120, \$2.10; No. 121,
\$2.25; No. 150 \$2.35Safety Underwriters F. D. No. 101
Palace, Adjustable Track No. 132
Royal, Adjustable Track No. 122
Ives' Wood Track No. 1 \$2.00
Trolley B. D. No. 20 50&10%
Trolley B. D. No. 24, \$1.30; No. 27, \$1.40; No. 37, \$2.30
Roller Bearings, Nos. 37, 38, 41, 43, 44, Sizes 1 and 2, 70&10%
Anti-friction, No. 42; No. 44,
sizes 2 1/2 and 3 60&10%
Hinged Tandem No. 48 60&5%
Folding Door B. B. Swivel No. 150 40%Stowell Mfg. & Foundry Co.:
Acme Parlor Ball Bearings 40%
Ajax Hinge Door 40%
Apex Parlor Door 50&10&5%
Atlas, 60"; Freight Car Door, 60"
Baggage Car Door 50%
Climax Anti-Friction 50&10%
Elevator 40%
Express 60&10%
Interstate 60&10%
Lundy Parlor Door 50&10%
Magic, 60"; Rex Hinge Door, 60"
Matchless 60&10%
Nansen 70&5%
Parlor Door, 50&10%; Railroad 50&10%Street Car Door 50&10%
Steel, Nos. 300, 401, 500 50&10%
Underwriters' Fire Door 40%
Wild West Warehouse Door, 50"
Zenith for Wood Track 50&10%A. L. Sweet Iron Works:
Check Back, 70"; Eagle 70%
Climax Parlor Ball 50&10%
Hrlo Hinge, New Perfection 60%
Pilot, Pilot Hinge 60%
Rider Woooster 60%
Western Pattern 70%Taylor & Boggis F'y Co.'s Kid-
der's Roller Bearing, 50&15&10&5%**Hangers— Garment—**Pullman Trouser, 3/4 gro. 1 pair Flat
Aluminum, \$9.00; 1 pair Round Nick-
eled, \$9.00; 4 pair Round Nickeled,
\$27.00; 1 pair Flat Gun Metal, \$12.00;
1 pair Flat Black Enamelled, \$7.50;
1 pair Wood Clamp, \$13.00; Shirt
Hangers, Folding, per gro., \$21.00;
Coat Hangers, Folding, per gro.,
\$8.00; Garment Hanger Rods, Round
Nickeled, per gro., \$15.00; Garment
Hanger Loops, Round Nickeled,
per gro. \$15.00
Victor Folding 3/4 gro. \$9.60
Western, W. G. Co. 70&10%**Gate—**Myers' Patent Gate Hangers, 3/4 doz.
net \$4.50**Joist and Timber—**

Lane Bros. Co. 30%

Hasps—Griffin's Security Hasp 50%
McKinney's Perfect Hasp, 3/4 doz. 50%**Hatchets—**Regular list, first quality 50%
Second quality \$1.00 per doz. less
than first quality.**Heaters, Carriage—**Clark, No. 5, \$1.75; No. 5B, \$2.00; No. 3,
\$2.25; No. 1D, \$2.75; No. 7D, \$3.00;
No. 2E, \$3.25; No. 1, \$3.50 15%
Clark Coal, 3/4 doz. \$0.75 10%**Hinges—****Blind and Shutter Hinges—**Surface Gravity Locking Blind:
(Victor; National; 1868 O. P.;
Niagara; Clark's O. P.;
Clark's Tip; Buffalo.)No. 1 3 5
Doz. pair \$0.75 1.35 2.70Mortise Shutter:
(L. & P. O. S., Dixie, &c.)
No. 1 1 1/2 2 3 4
Doz. pair \$0.70 .65 .60 .55Mortise Reversible Shutter (Buf-
falo, &c.):
No. 1 1 1/2 2
Doz. pair \$0.70 .65 .60North's Automatic Blind Fixtures,
No. 2, for Wood, \$9.00; No. 3, for
Brick, \$11.50 10%
Charles Parker Co. 70&10%Parker Wire Goods Co.:
Hale & Benjamin Automatic Blind
Hinges 20%
Hale's Blind Awning Hinges, No. 110,
for wood, \$9.00; No. 111, for
brick, \$9.00 60%
Reading's Gravity 60%Stanley's Steel Gravity Blind Hinges,
3/4 doz. sets, without screws, \$9.00;
with screws, \$12.00 75&10&5%Wrightsville Hardware Co.:
O. S., Lull & Porter 75&10&5%
Acme, Lull & Porter 75&10%
Queen City Reversible 75&10%
Shepard's Noiseless, Nos. 60, 65,
68 75&10&5%Niagara, Gravity Locking, Nos. 1,
3 & 5 75&10&5%
1868, Old Pat'n, Nos. 1, 3 & 5 75&10&5%Buff Pat'n, Nos. 1, 3 & 5 75&10&5%
Tippa Gravity Locking, Nos. 1,
3 & 5 75&10&5%
Shepard's Double Locking, Nos. 20,
25 70%Champion Gravity Locking, No. 75, 75%
Steamboat Gravity Locking, No. 10, 75%
Pioneer, Nos. 90, 45 & 59 75%
Empire, Nos. 101 & 103 75%
W. H. Co.'s Mortise Gravity Lock-
ing, No. 2 60%**Gate Hinges—**Clark's or Shepard's—Doz. sets:
No. 1 2 3
Hinges with Latches, \$2.00 2.70 5.00
Hinges only 1.40 2.05 3.80
Latches only70 .70 .35New England:
With Latch doz. \$2.00
Without Latch doz. \$1.60Reversible Self-Closing:
With Latch doz. \$1.75
Without Latch doz. \$1.35Western:
With Latch doz. \$1.75
Without Latch doz. \$1.15Wrightsville Hardware Co.:
Shepard's or Clark's, doz. sets,
No. 1, 2, 3
Hinges with Latches, \$2.00 2.70 5.00
Hinges only 1.40 2.05 3.80
Latches only70 .70 1.35**Pivot Hinges**Bommer Bros. Pivot 40%
Lawson Mfg. Co. Matchless 45%**Spring Hinges—**Holdback, Cast Iron, \$6.50&\$7.00
Non-Holdback, Cast Iron \$6.25&\$6.75
J. Bardaley:
Bardaley's Non-Checking Mor-
tise Floor Hinges 45%
Bardaley's Patent Checking, 15%
Bommer Bros.:
Bommer Ball Bearing Floor, 40%
Bommer Spring Hinges 40%
No. 999 Wrot, Steel Hold Back,
3/4 gr. \$9.00Chicago Spring Butt Co.:
Chicago Spring Hinges 25%
Triple End Spring Hinges 50%
Chicago (Ball Bearing) Floor, 50%
Garden City Engine House 25%
Keene's Saloon Door 25%
Columbian Hardware Co.:
Acme, Wrought Steel 30%
Acme, Brass 25%
American 30%
Columbia, 3/4 gr., No. 14, \$9.00;
No. 18, \$25.00
Gem, new list 30%
Clover Leaf 30%
Oxford, new list 30%
Floor Spring Hinges 65&10%
Lawson Mfg. Co. Matchless 30%
Richards Mfg. Co.:
Superior Double Acting Floor
Hinges 40%
Shelby Spring Hinge Co.:
Buckeye All Steel Holdback
Screen Door 30%
Ball Bearing Floor Hinge 50%
Ohio Detachable Screen Door
Hinge 3/4 gr. \$12.00
Superior Spring Hinge Co.:
Superior Floor Hinges 33%&10%
The Stover Mfg. Co.:
Ideal, No. 16, Detachable,
3/4 gr. \$12.50
Ideal, No. 4 3/4 gr. \$9.00
New Idea No. 1 3/4 gr. \$9.00
New Idea, Double Acting 45%
New Idea Floor 45%
Van Wagoner:
Ball Bearing 25%
No. 777 Sh't Steel Holdb'k, 3/4 gro. pr. \$9**Wrought Iron Hinges—**Strap and T Hinges, &c., list
December 20, 1904:Light Strap Hinges 65%
Heavy Strap Hinges 75%
Light T Hinges 60%
Heavy T Hinges 55%
Extra H T Hinges 70%
Hinge Hasps 45%
Cor. Heavy Strap 75%
Cor. Ex. Heavy T, 70&10%

Extra 10% often given on most of these Hinges.

Screw Hook and Strap. 8 to 12 in. 1b. 3¢
14 to 20 in. 1b. 3¢
22 to 36 in. 1b. 3¢
Screw Hook and Eye:
1/4 to 1 inch. 1b. 5¢
1/2 inch. 1b. 7¢
3/4 inch. 1b. 8¢

Hitchers, Stall—
Covert Mfg. Co., Stall Hitchers. 30¢2¢
Hods— Coal—

Inch 15 16 17 18
Galv. Open. \$2.50 2.75 3.00 3.25
Jap. Open. \$1.90 2.10 2.25 2.55
Galv. Funnel. \$3.00 3.30 3.60 3.90
Jap. Funnel. \$2.45 2.65 2.85 3.30

Masons' Etc.—
Cleveland Wire Spring Co.:
Steel Brick, No. 162. each \$0.95
Steel Mortar, No. 158. each \$1.25

Hoes— Eye—
Scovill and Oval Pattern. 60¢10¢60¢10¢10¢
Grub, list Feb. 23, 1899. 70¢10¢75¢10¢
D. & H. Scovill. 30¢

Handled—
NOTE—Manufacturers are selling from the list of September 1, 1904, but many jobbers are still using list of August 1, 1899, or selling at net prices.
Crown's Weeding No. 1, \$2.00; No. 2, \$1.25
Ft. Madison Cotton Hoe. 70¢10¢10¢
Ft. Madison Crescent Cultivator Hoe. 70¢10¢
Ft. Madison Mattock Hoe. 70¢10¢
Regular Weight. 60¢ doz. 60¢
Junior Size. 50¢ doz. 50¢
Ft. Madison Sprouting Hoe. 50¢ doz. 50¢
Ft. Madison Dixie Tobacco Hoe. 75¢10¢
Kretzinger's Cut Easy. 70¢10¢
Warren Hoe. 45¢10¢
W. & C. Ivanhoe. 75¢2¢
B. B. 6 in. Cultivator Hoe. \$3.15
B. B. 6 1/2 in. 33.35
Acme Weeding. 50¢ doz. net, \$4.35
W. & C. L'ning Shuffie Hoe. 40¢10¢

Hoisting Apparatus—
See Machines, Hoisting.
Holders— Bit—
Angular. 50¢ doz. \$24.00. 45¢10¢
Door—
Bardley's. 45¢
Empire. 50¢
Pullman. 50¢
Superior. 33¢1/2

File and Tool—
Nicholson File Holders and File Handles. 33¢1/240¢
Fruit Jar—
Triumph Fruit Jar Holder, 50¢ gross, \$10.80; 50¢ doz. \$1.25

Hones—Razor—
Pike Mfg. Co., Belgian, German and Swat. 50¢
Hooks—Cast Iron—
Bird Cage, Reading. 40¢
Clothes Line, Reading List. 40¢
Clothes Line, Stowell's. 70¢
Coat and Hat, Reading. 45¢20¢
Coat and Hat, Stowell's. 70¢
Coat and Hat, Wrightsville. 40¢
Harness, Reading List. 60¢
Harness, Stowell's. 60¢
School House, Stowell's. 70¢

Wire—
Belt. 60¢10¢10¢
Wire C. & H. Hooks. 75¢10¢75¢10¢10¢
Columbian Hdw Co., Gem. 70¢10¢
Parker Wire Goods Co., King. 70¢10¢
Van Wagner, Coat and Hat. 70¢
Western W. G. Co. Molding. 75¢
Wire Goods Co.:
Acme, 60¢10¢; Chief, 70¢; Crown, 75¢; Czar, 65¢; V Brace, 75¢; Czar Harness, 50¢10¢.

Wrought Iron—
Box, 6 in., per doz., \$1.90; 8 in., \$1.25; 10 in., \$2.50.
Cotton. 50¢ doz. \$1.05¢1.25
Wrought Staples, Hooks, &c. See Wrought Goods

Miscellaneous—
Hooks, Bench, see Stops, Bench.
Bush, Light, doz. \$1.75; Medium, \$5.35; Heavy, \$6.25
Grass, best, all sizes, per doz. \$1.60
Grass, common grades, all sizes, per doz. \$1.30
Whiffletree. 1b. 5¢1/2¢
Hooks and Eyes:
Brass. 60¢5¢60¢10¢5¢
Malleable Iron. 70¢70¢10¢
Covert Mfg. Co. Gate and Scuttle Hooks. 60¢
Ft. Madison Cut-Easy Corn Hooks. 50¢ doz. \$3.25 net

Belt Hooks—See Belts.
Corn Hooks—See Knives, Corn.
Horse Nails—
See Nails, Horse.
Horseshoes—
See Shoes, Horses.
Hose, Rubber—
Garden Hose, 1/2-inch:
Competition. ft. 5 @ 6¢
3-ply Guaranteed, ft. 8 @ 9¢
4-ply Guaranteed, ft. 10 @ 11¢
Cotton Garden, 3/4-in., coupled:
Low Grade. ft. 8 @ 9¢
Fair Quality. ft. 10 @ 11¢

Iron—Saw—
From 4 to 10. 1b. 3¢1/2¢
B. B. Saw Irons. 1b. 3¢1/2¢
Mrs. Potts', cents per set:
Nos. 50 55 60 65
Jap'd Tops. 65 62 75 72
Tin'd Tops. 70 67 80 77
New England Pressing, 1b. 3¢1/2¢

Pinking—
Pinking Irons. 50¢ doz. 40¢

Iron, Soldering
See Copiers.
Jacks, Wagon—
Covert Mfg. Co.:
Auto Screw. 30¢2¢; Steel, 45¢
Lockport. 50¢
Lane's Steel. 30¢10¢2¢
Richards' Tiger Steel, No. 130. 50¢10¢
Smith & Hemenway Co.'s. 25¢

Kettles—
Brass, Spun, Plain. 20¢25¢
Enamelled and Cast Iron—See Ware, Hollow.
Knives—
Butcher, Kitchen, &c.—
Foster Bros' Butcher, &c. 30¢
Wilkinson Shear & Cutlery Co. 60¢

Corn—
Wilkinson Wilcut Brand Knives and Hooks. 60¢
Withington Acme. 50¢ doz. \$2.65
Dent, \$2.75; Adj. Serrated, \$2.20;
Serrated, \$2.10; Yankee No. 1, \$1.50;
Yankee No. 2, \$1.15.

Drawing—
Standard List. 75¢5¢75¢10¢
C. E. Jennings & Co., Nos. 45, 46. 60¢
Jennings & Griffin, Nos. 41, 42. 60¢
Swan's. 75¢
Watrous. 16¢
L. & I. White. 20¢5¢25¢

Hay and Straw—
Serrated Edge, per doz. \$5.75¢10¢
Iwan's Sickle Edge. 50¢ doz. \$9.50
Iwan's Serrated. 50¢ doz. \$10.00

Mincing—
Buffalo. 50¢ gro. \$13.00
Miscellaneous—
Farriers'. 50¢ doz. \$3.00¢3.25
Wostenholm's. 50¢ doz. \$3.00¢3.25

Knobs—
Base, 2 1/2-inch, Birch, or Maple, Rubber Tip. 50¢ gro. \$1.25¢1.50
Carriage, Jap., all sizes. 40¢1/2¢
Door, Mineral. 50¢ doz. 65¢70¢
Door, Por. Jap'd. 50¢ doz. 70¢75¢
Door, Por. Nickel. 50¢ doz. \$2.05¢2.15
Bardley's Wood Door, Shutters, &c. 15¢

Lacing, Leather—
See Belting, Leather.
Ladders, Store, &c.—
Allith Mfg. Co., Reliable. 50¢
Lane's Store. 25¢
Myers' Noiseless Store Ladders. 50¢
Richards' Mfg. Co.:
Improved Noiseless, No. 112. 50¢
Climax Shelf, No. 113. 50¢
Trolley, No. 109. 50¢

Ladles, Melting—
L. & G. Mfg. Co. (low list). 25¢
P. S. & W. 50¢
Reading. 60¢

Lanterns—Tubular—
Regular Tubular, No. 0. 50¢
Lift Tubular, No. 0. 50¢
Hinge Tubular, No. 0. 50¢
Other Styles. 40¢1/2¢45¢

Bull's Eye Police—
No. 1, 2 1/2-inch. \$2.75¢3.00
No. 2, 3-inch. \$3.00¢3.25
Lasts and Stands, Shoe—
Stowell's Atlas, Malleable Iron. 50¢
Stowell's Badger, Cast Iron. 50¢

Latches—Thumb—
Roggin's Latches, with screw. 50¢ doz. \$5¢10¢
Door—
Allith Mfg. Co., Automatic, No. 400. 50¢ doz. \$4.00
Cronk & Carrier Mfg. Co. 50¢
Cronk & Carrier Mfg. Co., Latch, Haap and Staples. 50¢
Richards' Bull Dog, Heavy, No. 125. 50¢5¢
Richards' Trump, No. 127. 50¢1/2¢
Stowell's Steel. 50¢

Loaders, Cattle—
Small. 50¢ doz. 50¢; large, 60¢
Covert Mfg. Co.:
Cotton, Hemp and Jute, 45¢;
Sisal, 33¢1/2.

Litters, Transom—
R. & E. 33¢1/2

Lines—
Wire Clothes, Nos. 18 19 20
100 feet. \$2.25 2.00 1.75
75 feet. \$1.75 1.35 1.10
Annisston Waterproof Clothes. 50 ft. 50¢
No. 25. \$2.50; Gilt Edge, \$2.00; Air Line, \$2.00; Acme, \$1.00; Advance, \$1.70; Empire, \$1.60; Advance, \$1.10; Eclipse, \$1.50; Chicago, \$1.10; Standard, \$1.50; Columbia, \$1.50; Allston, \$1.50; Calhoun, \$1.00.
Samsom Cordage Works:
Solid Braided Chalk, Nos. 0 to 3. 40¢
Silver Lake Braided Chalk, No. 0. 30¢
No. 1, 30¢; No. 2, 30¢; No. 3, 30¢.
Masons' Lines, Shade Cord, &c.:
White Cotton, No. 3/4, \$1.50; No. 4, \$2.00; No. 4 1/2, \$2.50; Colors, No. 3/4, \$1.75; No. 4, \$2.25; No. 4 1/2, \$2.75; Linen, No. 3/4, \$2.50; No. 4, \$3.50; No. 4 1/2, \$4.50.
Tent and Awning Lines: No. 5, White Cotton, \$7.50; Drab Cotton, \$8.50.
Clothes Lines, White Cotton: 50 ft. \$2.75; 60 ft. \$3.25; 70 ft. \$3.75; 75 ft. \$4.00; 80 ft. \$4.25; 90 ft. \$4.75; 100 ft. \$5.25.

Locks— Cabinet—
Cabinet Locks. 33¢1/2¢3 1/2¢4 1/2¢
Door Locks, Latches, &c.—
NOTE—Net Prices are very often made on these goods.
Reading Hardware Co. 40¢
R. & E. Mfg. Co. 40¢
Elevator—
Stowell's. 50¢
Padlocks—
Wrought Iron. 75¢10¢5¢80¢5¢
Net prices are general.
R. & E. Mfg. Co. Wrought Steel and Brass. 75¢10¢
Sash, &c.—
Ives' Patent:
Bronze and Brass, 60¢; Crescent, 40¢20¢; Iron, 60¢; Window Ventilating, 55¢; Robinson Pat. Ventilating Sash Lock, 33¢1/2¢; Wrought Bronze and Brass, 55¢; Wrought Steel, 35¢.
Pullman Patent Ventilating Lock. 25¢
Reading. 40¢

Machines—Boring—
Com. Up't, without Augers, \$2.00¢2.25
Com. Ang'l'r, without Augers, \$2.25¢2.50
Swan's Improved. 40¢10¢
Jennings' Nos. 1 and 4. 35¢5¢
Miller's Falls. 50¢
Snell's, Rice's Pat. 2.50 2.75

Corking—
Reisinger Inviucible Hand Power. 50¢ doz. \$18.00
Fence—
Williams' Fence Machines. each, \$5.50
Hoisting—
Moore's Anti-Friction Differential Pulley Block. 30¢
Moore's Hand Hoist, with Lock Brake. 20¢

Ice Cutting—
Chandler's. 12 1/4¢
Washing—
Boss Washing Machine Co.: Per doz.
Boss No. 1. \$37.00
Boss Rotary. \$54.00
Champion Rotary Banner No. 1. \$54.00
Standard Champion No. 1. \$48.00
Standard Perfection. \$38.00
Cint. Square Western. \$30.00
Uneda American, Round. \$30.00

Mallets—
Hickory. 45¢5¢50¢
Lignumvite. 45¢5¢50¢
Timbers' Hickory and Applewood. 45¢5¢50¢
Mangers, Stable—
Sweet Iron Works. 50¢
Mashers, Vegetable—
Western, W. G. Co., Potato. 60¢10¢
Mats, Door—
Elastic Steel (W. G. Co.), new list. 80¢10¢
Keystone Wire Matting Co.:
Keystone. 50¢
Ideal. 50¢

Mattocks—
See Picks and Mattocks.
Milk Cans—See Cans, Milk.
Mills, Coffee, &c.—
Enterprise Mfg. Co. 20¢25¢
National list Jan. 1, 1902. 30¢
Parker's Columbia & Victoria. 50¢10¢60¢
Parker's Box and Side. 50¢10¢60¢
Swift, Lane Bros. Co. 30¢

Mowers, Lawn—
NOTE—Net prices are generally quoted
Cheapest. all sizes, \$1.85¢2.00
Cheap. all sizes, \$2.00¢2.50
Better Grade. all sizes, \$2.50¢4.50
High Grade. \$4.50 4.75 5.00 5.25
Continental. 60¢5¢
Great American Ball B'g, new list. 70¢
Quaker City. 70¢
Pennsylvania. 60¢5¢
Pennsylvania, V. Ball Bearing. 60¢
Pennsylvania Golf. 50¢
Pennsylvania Horse. 33¢45¢
Pennsylvania Pony. 40¢45¢
Granite State:
Style A, Low Wheel. 70¢10¢10¢5¢
Style B, Low Wheel. 70¢10¢10¢5¢
Style C, High Wheel. 70¢10¢
Style D, High Wheel. 70¢
Philadelphia:
Styles M., S., C., K., T. 70¢5¢
Style A, all Steel. 60¢5¢
Style E, High Wheel. 70¢10¢5¢
Drexel and Gold Coin, special list. 50¢

Nails—
Wire Nails and Brads, Miscellaneous. 85¢10¢85¢10¢5¢
Cut and Wire. See Trade Report.
Hungarian Finishing, Upholsterers' &c. See Tacks.
Horse—
Nos. 4 7 8 9 10
Anchor. 23 21 20 19 18. 40¢5¢
Champlain. 28 26 25 23. 50¢
Coleman. 13 12 11. net
New Haven. 23 21 20 19. 40¢5¢
Western. 30 lb 8 1/2¢
Jobbers' Special Brands. per lb. 9¢10¢
Picture—
1 1/2 2 2 1/2 3 in.
Brass H'd. 55 60 70. gro
Por. Head. 1.10 1.10 1.10. gro

Nippers—
See Pliers and Nippers.
Nuts—
Cold Punched. Off Hat.
Square, Blank or Tapped. 4.90¢5.00¢
Hexagon, Blank or Tapped. 5.30¢5.40¢

Square, Blank, C. & T. 5.20¢5.30¢
Hexagon, Blank, C. & T. 5.90¢6.00¢

Hot Pressed:
Square, Blank. 5.10¢5.20¢
Hexagon, Blank. 5.50¢5.60¢
Square, Tapped. 5.00¢5.10¢
Hexagon, Tapped. 5.40¢5.50¢

Oakum—
Rest. 1b. 6 1/2¢
U. S. Navy. 1b. 6¢
Navy. 1b. 5¢
Plumbers' Spun Oakum. 5¢
In carload lots 1/4¢ lb. off, f.o.b. New York.

Oil Tanks—See Tanks, Oil.
Oilers—
Brass and Copper. 50¢10¢
Tin or Steel. 65¢10¢5¢70¢
Zinc. 65¢10¢5¢70¢
Chase or Paragon:
Brass and Copper. 50¢10¢
Tin or Steel. 65¢10¢
Zinc. 65¢10¢
Malleable, Hammers' Imp'd, Nos. 11, 12 and 13, 20¢; Old Pattern, Nos. 1, 2, 3, 50¢.
American Tube & Stamping Co.:
Spring Bottom Cans. 70¢70¢10¢
Railroad Oilers, &c. 60¢60¢10¢

Openers—Can—Per doz.
Sprague, Iron Handle. 30¢35¢
Sprague, Wood Handle. 35¢40¢
Sardine Scissors. \$1.75¢3.00
National. 50¢10¢
Stowell's Sprague. 50¢ doz. 35¢45¢
Vim Tin Shear and Can Opener. 50¢ doz. 75¢; per gro., \$7.50

Egg—
Nickel Plate, 50¢ doz., \$2.00; Silver Plate, \$4.00.

Packing—
Asbestos Packing, Wick and Rope. 17¢22¢
Rubber—
(Fair quality goods.)
Sheet, C. I. 11¢12¢
Sheet, C. O. 8. 11¢12¢
Sheet, C. B. 8. 12¢13¢
Sheet, Pure Gum. 40¢45¢
Sheet, Red. 40¢50¢
Jenkins' '96, 1b 80¢ 25¢5¢

Miscellaneous—
American Packing. 1b. 7¢10¢
Cotton Packing. 1b. 16¢25¢
Italian Packing. 1b. 9¢12 1/2¢
Jute. 1b. 4¢4 1/2¢
Russia Packing. 1b. 8¢11¢

Pails, Creamery—
R. M. Co., with gauges—No. 1, \$6.25; No. 2, \$6.50 per doz.

Pails, Water, Well, &c.—
See Buckets.
Pans—Dripping—
Standard List. 65¢10¢

Fry—
Nos. 1 2 3 4 5
Per doz. \$0.75 0.80 0.90 1.10 1.30
Refrigerator, Galva.—
Inch 12 14 16 18
Per doz. \$1.75 2.25 2.90 3.15

Roasting and Baking—
Regal, R. M. Co., 50¢ doz., Nos. 5, \$4.50; 10, \$5.25; 20, \$5.75; 30, \$6.25.
Savory. 50¢ doz., net, Nos. 200, \$9.00; 400, \$15.00.
Simplex. 50¢ gro.:
No. 40 60 100 150 160
\$30.00 35.00 42.00 34.00 39.00 46.00

Paper—Building Paper
Asbestos. 1b.
Roll Board or Building Felt, 6 to 30 lb., per 100 sq. ft. 6¢
Roll Board or Building Felt, 3-32 and 1/4 in., 45 to 60 lbs., per 100 sq. ft. 8¢
Mill Board, Sheet, 40 x 40 in., 1-32 to 1/4 in. 7¢

Rosin Sized Sheathing: 500 sq. ft.
Light weight, 25 lbs. to roll. 35¢10¢
Medium weight, 30 lbs. to roll. 40¢15¢
Heavy weight, 40 lbs. to roll. 50¢60¢

Black Water Proof Sheathing,
500 sq. ft., 1 ply, 65¢; 2 ply, 85¢; 3 ply, \$1.10; 4 ply, \$1.25.
Deafening Felt, 9, 6 and 4 1/2 sq. ft. to lb. ton. \$18.00
Red Rope Roofing, 250 sq. ft. per roll. \$1.75

Tarred Paper—
1 ply (roll 300 sq. ft.), ton. \$32.50¢35.50
2 ply, roll 108 sq. ft. 55¢
3 ply, roll 108 sq. ft. 75¢
Slater's Felt (roll 500 sq. ft.) 70¢

Sand and Emery—
Flint Paper and Cloth. 50¢10¢60¢
Garnet Paper and Cloth. 50¢
Emery Paper and Cloth. 50¢10¢60¢

Parers—Apple—
Advance. 50¢ doz. \$1.00
Paidwin. 50¢ doz. \$1.00
Bonanza Improved. 50¢ doz. \$1.00
Daisy. 50¢ doz. \$1.00
Dandy. 50¢ doz. \$1.00
Eureka Improved. 50¢ doz. \$1.00
Family Bay State. 50¢ doz. \$1.00
Improved Bay State. 50¢ doz. \$1.00
Little Star. 50¢ doz. \$1.00
New Lightning. 50¢ doz. \$1.00
Reading 72. 50¢ doz. \$1.00

Reading 78.....	doz. \$6.25
Rocking Table.....	doz. \$6.25
Turn Table 98.....	doz. \$6.00
White Mountain.....	doz. \$5.00

Potato—	
Saratoga.....	doz. \$7.00
White Mountain.....	doz. \$6.00

Picks and Mattocks—

List, Feb. 23, 1899.....	75¢@75¢55
Cronk's Handled Garden.....	doz. \$3.40
doz.....	33%

Pinking Irons—

See Irons, Pinking.

Pins, Escutcheon—

Brass.....	50¢@10¢@60%
Iron, list Nov. 11, '85.....	60¢@60¢10%

Pipe, Cast Iron Soil—

Carload lots.

Standard, 2-6 in. 50¢@10¢@50¢@10¢55	
Extra Heavy, 2-6 in. 65¢@10	
Fittings.....	70¢@10¢@70¢@10¢55

Pipe, Merchant—

Consumers, Carloads.

Steel.	Iron.	Blk. Galv.	Blk. Galv.
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Hindustan No. 1, R's lar. 10 lb 8¢
Hindustan No. 1, Small. 10 lb 10¢
Axe Stones (all kinds). 5 to 8 in. 10¢
Queer Creek Stones, 4 to 8 in. 10¢
Queer Creek Slips. 10¢
Sand Stone. 10¢

Scythe Stones—

Chicago Wheel & Mfg. Co.:
Gem Corundum, 10 in., \$8.00
gro., 12 in., \$10.00
Norton Emery Scythe Stones:
Less than gross lots. \$9.00
One gross or more. \$7.20
Lots of 10 gross or more. \$6.00

Pike Mfg. Co., 1901 list:
Black Diamond S. S. \$12.00
Lamotte S. S. \$11.00
White Mountain S. S. \$9.00
Green Mountain S. S. \$8.00
Extra Indian Pond S. S. \$7.50
No. 1 Indian Pond S. S. \$7.00
No. 2 Indian Pond S. S. \$6.50
Leader Red End S. S. \$6.00
Quick Cut Emery. \$10.00
Pure Corundum. \$18.00
Crescent. \$7.00
Emery Scythe Rifles, 3 Coat. \$8
Emery Scythe Rifles, 4 Coat. \$12
Balance of 1904 list 3 1/2%

Stoppers, Bottle—

Victor Bottle Stoppers. \$9.00

Stops—Bench—

Millers Falls. 15¢-10¢
Morrell's, No. 1, 10¢-10¢
Morrell's, No. 2, 12¢-10¢

Door—

Chapin-Stephens Co. 10¢-10¢

Plane—

Chapin-Stephens Co. 20¢

Straps—Box—

Cary's Universal, case lots. 25¢-20¢

Stretchers, Carpet—

Cast Iron, Steel Points, doz. 60¢-60¢-10¢

Socket. doz. \$1.00

Excelsior Stretcher and Tack Hammer Combined. \$6.00

Strops, Razor—

Star Diagonal Strop. 25¢

Stuffers, Sausage—

Enterprise Mfg. Co. 25¢-15¢

National Specialty Co., list Jan. 1, 1902. 30¢-25¢

Sweepers, Carpet—

National Sweeper Co.:
Louis XV, Roller Bearing, Gold Plated. \$120.00
Hepplewhite, Roller Bearing, Silver Plated. \$72.00
Sheraton, Roller Bearing, N'kel. \$60.00
Ye Mission, Roller Bearing, Oxidized Copper. \$56.00
Transparent, Roller Bearing, Plate Glass top, Nickel. \$36.00
National Queen, Roller Bearing, Fancy Veneers. \$27.00
Loyal, Roller Bearing, Veneers, Nickel. \$25.00
Triple Medal, Roller Bearing, Nickel. \$24.00
Marion, Roller Bearing, N'kel. \$24.00
Marion Queen, Roller Bearing, Nickel. \$24.00
Monarch, Roller Bearing, N'kel. \$22.00
Monarch, Roller Bearing, Jap. \$20.00
Perpetual, Regular B'rgs, N'kel. \$20.00
Perpetual, Regular B'rgs, Jap. \$18.00
Monarch Extra (17 in. case), Roller Bearing, Nickel. \$36.00
Monarch Extra (17 in. case), Roller Bearing, Japanned. \$33.00
Auditorium (26 in. case), Roller Bearing, Nickel. \$54.00
Mammoth (30 in. case), Roller Bearing, Nickel. \$60.00

NOTE.—Rebates: 50¢ per dozen on three-dozen lots; \$1 per dozen on five-dozen lots; \$2 per dozen on ten-dozen lots; \$2.50 per dozen on twenty-five-dozen lots.

Streator Metal Stamping Co.:

Model B, Sanitary. \$25.00

Model A, Sterling. \$25.00

Model B, Sterling, Nickel. \$23.00

Model B, Sterling, Japanned. \$21.00

Model C, Sterling. \$21.50

Model D, Sterling. \$19.50

Tacks, Finishing Nails, &c.

New List, May 1, 1905.

American Carpet Tacks. 90¢-10¢

American Cut Tacks. 90¢-10¢

Swedes Cut Tacks. 90¢-10¢

Swedes Upholsterers'. 90¢-10¢

Gimp Tacks. 90¢-10¢

Lace Tacks. 90¢-10¢

Trimmers' Tacks. 90¢-10¢

Looking Glass Tacks. 65¢

Bill Posters' and Railroad Tacks. 90¢-10¢

Hungarian Nails. 85¢

Finishing Nails. 70¢-10¢

Trunk and Clout Nails. 80¢

NOTE.—The above prices are for Standard Weights. An extra 5% is given on Medium Weights, and an extra 10% is given on light weights.

Miscellaneous—

Double Pointed Tacks. 90¢-5 or 6 tens

Tanks, Oil—

See also Nails, Wire.

Emerald, R. M. Co. 30-gal. \$3.40

Emerald, R. M. Co. 60-gal. \$1.25

Queen City, R. M. Co. 30-gal. \$3.65

Queen City, R. M. Co. 60-gal. \$4.50

Tapes, Measuring—

American Asses' Skin. 50¢-10¢

Patent Leather. 25¢-10¢-5¢

Steel. 33 1/2¢-5¢

Chesterman's. 25¢-10¢-5¢

Keuffel & Esser Co.:
Favorite, Ass Skin. 40¢-10¢-50¢
Favorite, Duck and Leather. 25¢-10¢-50¢

Metallic and Steel, lower list, 35¢
35¢-5%; Pocket, 35¢-50¢-50¢
Lufkin's:
Asses' Skin. 40¢-10¢-50¢
Metallic. 30¢-10¢-50¢
Patent Bend, Leather. 25¢-10¢-50¢
Pocket. 10¢-10¢-50¢
Steel. 35¢-10¢-50¢

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, 1/2-inch and larger—
per 100 lbs. \$2.75 to \$3.00

Thermometers—

Tim Case. 80¢-10¢-80¢-10¢-50¢

Ties, Bale—Steel Wire—

Single Loop. 80¢-10¢-50¢

Monitor, Cross Head, &c. 70¢

Brick Ties—

Niagara Brick Ties. 25¢-10¢

Tinners' Shears, &c.—

See Shears, Tinners', &c.

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tire Benders, Upsetters, &c.

See Benders and Upsetters, Tire.

Tools—Coopers'—

L. & I. J. White. 20¢-10¢-50¢

Hay—

Myers' Hay Tools. 50¢

Stowell's Hay Carriers. 50¢

Forks, 50¢; Fork Pulleys, 50¢.

Miniature—

Smith & Hemenway Co.'s. 25¢

Saw—

Atkins' Cross Cut Saw Tools. 40¢

Simonds' Improved. 35¢

Simonds' Crescent. 25¢

Ship—

L. & I. J. White. 25¢

Transom Lifters—

See Lifters, Transom.

Traps—Fly—

Balloon, Globe or Acme, doz. \$1.15 to \$1.25; gro. \$11.50 to \$12.00

Harper, Champion or Paragon, doz. \$1.25 to \$1.40; gro. \$13.00 to \$13.50

Game—

Imitation Oneida. 75¢-75¢-50¢

Newhouse. 45¢-45¢-50¢

Hawley & Norton. 65¢

Victor. 70¢-10¢

Oneida Community Jump. 50¢

Mouse and Rat. Holes

Mouse, Wood, Choker, doz. holes 84¢-9¢

Mouse, Round or Square Wire, doz. 85¢-90¢

Marty French Rat and Mouse Trap (Genuine):

No. 1, Rat, each \$1.21; 10 doz. \$13.25

No. 3, Rat, 10 doz. \$6.50; case of 50 \$7.75 doz.

No. 3 1/2, Rat, 10 doz. \$3.25; case of 72 \$4.70 doz.

No. 4, Mouse, 10 doz. \$3.25; case of 150 \$3.00 doz.

No. 5, Mouse, 10 doz. \$3.00; case of 150 \$2.25 doz.

Wood's E. I. 50¢

Trowels

Disston Brick and Pointing. 25¢

Disston Plastering. 20¢

Disston "Standard Brand" and Garden Trowels. 30¢

Kohler's Steel Garden Trowels, 10 doz. 5 in., \$1.80; 6 in., \$4.00.

Never-Break Steel Garden Trowels. 50¢

Rose Brick and Plastering. 25¢-50¢

Woodrough & McParlin, Plastering. 25¢

Trucks, Warehouse, &c.—

B. & L. Block Co.:
New York Pattern. 50¢-10¢

Western Pattern. 60¢-10¢

Handy Trucks. 10¢-10¢

Grocery. 10¢-10¢

Daisy Stove Trucks, Improved Pattern. 10¢-10¢

McKinney Trucks. each \$10.00

Model Store Trucks. 10¢-10¢

Tubs, Wash—No. 1 2 3

Galvanized, per doz. \$4.25 4.75 5.25

Galvanized Wash Tubs (R. M. Co.):

No. 1 2 3 10 20 30

Per doz., net. \$3.70 6.30 1.20 6.90 7.20 \$1.15

Twine, Miscellaneous—

Flax Twine: BC. B.

No. 9, 1/4 and 1/2-lb. Balls. 22¢-24¢

No. 12, 1/4 and 1/2-lb. Balls. 18¢-20¢

No. 18, 1/4 and 1/2-lb. Balls. 16¢-18¢

No. 24, 1/4 and 1/2-lb. Balls. 16¢-18¢

No. 36, 1/4 and 1/2-lb. Balls. 15¢-17¢

Chalk Line, Cotton 15¢-10¢

Balls. 25¢-30¢

Cotton Mops, 6, 9, 12 and 15 lb. 10¢-15¢

Cotton Wrapping, 5 Balls to lb., according to quality. 14¢-20¢

American 2-Ply Hemp, 1/4 and 1/2-lb. Balls. 13¢-14¢

American 3-Ply Hemp, 1-lb. Balls. 18¢-14¢

India 2-Ply Hemp, 1/4 and 1/2-lb. Balls (Spring Twine). 9¢

India 3-Ply Hemp, 1-lb. Balls. 9¢

India 3-Ply Hemp, 1 1/2-lb. Balls. 7 1/2¢-8 1/2¢

2, 3, 4 and 5-Ply Jute. 14¢-16¢

Balls. 9 1/2¢-10 1/2¢

Mason Line, Linen, 1/2-lb. Bls. 46¢

No. 26 Mattress, 1/4 and 1/2-lb. Balls. 37¢

Wool, 3 to 6 ply. B 7¢; A 7 1/2¢

Vises—

Solid Box. 60¢

Parallel—

Athol Machine Co.:
Simpson's Adjustable. 40¢

Standard. 40¢

Amateur. 25¢

Columbia H. Co. 40¢

Emmert Universal:
Pattern Makers' No. 1, \$13.00; No. 2, \$12.50.

Machinist and Tool Makers' No. 1A, \$12.50; No. 5A, \$7.00; No. 6A, \$10.00; No. 10A, \$22.50.

Presto Quick Acting. 25¢-25¢-50¢

Tiger Machinists. 40¢

Fisher & Norris Double Screw. 15¢-10¢

Hollands:
Machinists'. 100¢-55¢

Keystone. 55¢-70¢

Lewis Tool Co.:
Adjustable Jaw. 50¢

Monarch, 50%; Solid Jaw. 50¢

Massey Vice Co.:
Climber. 40¢

Perfect, 20%; Lightning Grip. 20¢

Merrill's. 20¢

Miller Falls. 60¢-10¢

Parker's:
Victor, 20¢-25¢; Regular. 20¢-25¢

Vulcan's. 40¢-45¢

Combination Pipe. 55¢-60¢

Prentiss. 20¢-25¢

Snediker's X. L. 35¢

Stephens. 35¢

Saw Filers—

Disston's D 3 Clamp and Guide, 10 doz. \$24.00, 30%; Clamps. 30%

Perfection Saw Clamps, 10 doz. \$1.50

Reading. 60¢

Wentworth's Rubber Jaw, No. 1 and 3. 45¢-50¢

Wood Workers—

Massey Vice Co.:
Lightning Grip, 15%; Perfect. 15%

Wyman & Gordon's Quick Action, 6 in., \$6.00; 9 in., \$7.00; 14 in., \$8.00.

Miscellaneous—

Bigall & Keeler Combination Pipe. 60¢-10¢

Holland's Combination Pipe. 60¢-60¢-50¢

Massey's Quick Action Pipe. 40¢

Parker's Combination Pipe. 40¢

87 Series, 60%; 187 Series, 60¢-50¢; No. 870, 40%.

Wads—Price per M.

B. E., 11 up. 60¢

B. E., 9 and 10. 70¢

B. E., 8. 80¢

B. E., 7. 80¢

P. E., 11 up. \$1.00

P. E., 9 and 10. 1.25

P. E., 8. 1.50

P. E., 7. 1.50

Ely's B. E., 11 and larger. \$1.70 to \$1.75

Ely's P. E., 12 to 20. \$3.00 to \$3.25

Ware, Hollow—**Cast Iron, Hollow—**

Stove Hollow Ware:

Enameled. 55¢

Ground. 60¢

Plain or Unground. 65¢

Country Hollow Ware, per 100 lbs. \$2.75

White Enameled Ware:

Maslin Kettles. 70¢

Covered Wares. 40¢

Tinned and Turned. 50¢

Enameled. 50¢

See also Pots, Glue.

Enameled—

Agate Nickel Steel Ware. 60¢

Iron Clad Ware. 70¢-10¢

Lava, Enameled. 40¢-10¢